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ABSTRACT

The range and characteristics of learning strategies used in studying foreign languages were studied in a 3-year project involving 67 high school students of Spanish and 34 college students of Russian. This final report reviews second language acquisition theory and learning strategies, research in learning strategies, and a cognitive model of research on second language learning strategies. Additional findings of a longitudinal study of the subjects are reported for reading, writing, and listening in Spanish and for the strategy of problem identification for Russian students. Methodology and findings of the course development study conducted during this project are also presented. In general, findings of this project indicate that all students, no matter what their degree of success in learning a foreign language, have some cognitive control over their learning efforts and are able to describe their own mental processes. The main differentiation between the more effective students and the less effective ones was in the way in which strategies were used and the greater range of different types of strategies used by effective students. Classroom applications such as reading, writing, and listening comprehension strategies, are described. Lists of sources for the Spanish reading and listening passages are appended, as is a list of sources for the pictures used in the writing activity. Contains approximately 110 references. (LB)

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A STUDY OF LEARNING STRATEGIES IN FOREIGN LANGUAGE INSTRUCTION:

The Third Year and Final Report

by
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August 1988

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CHAPTER I

Introduction to a Study of Learning Strategies In Foreign Language Instruction

Introduction

This document is the Third Year (and Final) Report for the project "A Study of Learning Strategies in Foreign Language Instruction", which is being conducted by Interstate Research Associates under a grant awarded by the International Research and Studies Program of the U.S. Department of Education. The project consists of three major studies: (a) a Descriptive Study, which identified learning strategies used in studying foreign languages, (b) a Longitudinal Study, which identified differences in the strategy use of effective and ineffective language learners, as well as analyzing changes in their strategy use over time; and (c) a Course Development Study, in which foreign language instructors have taught their students to apply learning strategies. The Descriptive Study was completed in the first year of the project, and results were reported in Chamot, O'Malley, Küpper, & Impink-Hernandez (1987). The Longitudinal Study was initiated during the first year of the project and continued throughout the second and third years; initial results were reported in Chamot, Küpper, & Impink-Hernandez (1988) and more findings are reported in this document. The Course Development Study was initiated in the second year of the study and completed in the third year; this report presents results.

The major purposes of this final report, then, are: (a) to present additional findings of the Longitudinal Study, (b) to describe the methodology and results

of the Course Development Study, and (c) to explore the instructional implications of what this three-year project has discovered about learning strategies in second language learning. This chapter will focus upon reviewing the literature on second language acquisition, learning strategies, and how cognitive theories of learning can be applied to research of second language learning strategies. The chapter will conclude by presenting an overview of the three studies comprising "A Study of Learning Strategies in Foreign Language Instruction" and the organization of this report.

Background

Research and theory in second language learning strongly suggest that good language learners use a variety of strategies to assist them in gaining command over new language skills. Learning strategies are operations or steps used by a learner to facilitate the acquisition, storage, or retrieval of information (Rigney, 1978; Dansereau, 1985). Second language learners who use active and varied strategies to assist their learning tend to be more effective learners than those who do not use strategies or who rely upon simple rote repetition (O'Malley, Chamot, Stewner-Manzanares, Küpper, & Russo, 1985a; Politzer & McGroarty, 1985; Rubin, 1975; Wenden, 1985). Although some learners are adept at devising strategies to assist second language acquisition, many others tend to be less effective at developing strategies and consequently may encounter difficulties in learning the new language.

Learners can be trained to apply strategies to second language learning tasks. For instance, strategy training has led to improved recall of vocabulary (Cohen & Aphek, 1981) and improved listening and speaking skills (O'Malley, Chamot, Stewner-Manzanares, Russo, & Küpper, 1985b). However, individuals

may not always adopt new strategies if they already have had prior success with simpler strategies or if their training has not been sufficient to encourage transfer (O'Malley et al., 1985b). For this reason, second language teachers need to play an active role in teaching their students how to apply learning strategies to varied language activities and how to extend the strategies to new tasks.

Studies of learning strategies with second language learners have been influenced by theories in second language acquisition and in cognitive psychology. Although there have been theoretical advances in these two areas, there has been little communication between them which might lead to reformulation of research questions or designs. Revelant second language and cognitive research are briefly reviewed below. Theories of second language acquisition are discussed to identify cognitive processes that relate to learning strategy applications. Research on learning strategies in both the second language area and in cognitive psychology is described. Following this discussion is a description of how research and theory in second language learning and cognitive psychology can be integrated into a model for research on language learning strategies.

Second Language Acquisition Theory and Learning Strategies

Theories of second language learning and proficiency often include a cognitive component, but the role of learning strategies has remained vague. In Cummins' (1984) model of language proficiency, tasks vary along a continuum from cognitively undemanding to cognitively demanding, while language varies along a continuum of context-embedded to context-reduced. Academic tasks, for example, are cognitive demanding and usually require language in

which contextual cues for meaning are reduced. Tasks outside the classroom, on the other hand, are relatively undemanding cognitively and are characterized by language that either has rich contextual clues or is formulaic. The role of learning strategies, although potentially located in the cognitive component of this proficiency model, has never been expressly identified.

Other models of language competence also contain cognitive components but leave the role of learning strategies ambiguous. For example, Canale and Swain's (1980) model of communicative competence includes grammatical, sociolinguistic, and strategic competence. In this model, the strategic component refers to communication strategies, which can be differentiated from learning strategies by the intent of the strategy use. Wong Fillmore and Swain's (1984) model of second language competence includes a cognitive component as well as linguistic and affective components. Unlike prior conceptual models, Wong Fillmore and Swain reserve an important role for learning strategies in the cognitive component. Learning strategies are said to be the principal influence on learning a second language for children, whereas inherent developmental and experiential factors are primarily responsible for first language learning, in their view. The types of strategies described by Wong Fillmore and Swain appear to be more global than those usually described by cognitive psychology, however, and the role they play with regard to the other model components has not been identified.

While most second language models either fail to acknowledge learning strategies at all or mention them only in passing, Bialystok (1978) includes four categories of learning strategies in her model of second language

learning: inferencing, monitoring, formal practicing, and functional practicing. In this model, learning strategies are defined as "optimal means for exploiting available information to improve competence in a second language" (p. 71). The type of strategy used by the learner will depend on the type of knowledge required for a given task. Bialystok discusses three types of knowledge: explicit linguistic knowledge, implicit linguistic knowledge, and general knowledge of the world. She hypothesizes that inferencing may be used with implicit linguistic knowledge and knowledge of the world. Monitoring, formal practicing (such as verbal drills found in a second language classroom), and functional practicing (such as ocmpleting a transaction at a store) contribute both to explicit and implicit linguistic knowledge. That is, strategies introduced explicitly in a formal setting can contribute to implicit linguistic knowledge and therefore to students' ability to comprehend and produce spontaneous language.

Bialystok's model can be contrasted with Krashen's Monitor Model (1982), which does not allow for contributions of explicit linguistic knowledge (learning) to implicit linguistic knowledge (acquisition). The Monitor Model includes two types of language processes: "acquisition" and "learning." Acquisition is described as occurring in spontaneous language contexts, is subconscious, and leads to conversational fluency. Learning, on the other hand, is equated by Krashen with conscious knowledge of the rules of language that is derived from formal and traditional instruction in grammar. The "Monitor" is a conscious process which involves analyzing language production (either oral or written) for correspondence to learned grammatical rules, which means that it is a highly deliberate form of processing. In Krashen's view, "learning" does not lead to "acquisition." Therefore, the

conclusion is inescapable that conscious use of learning strategies to develop language competence has no role in this model.

McLaughlin, Rossman, and McLeod (1983) propose an information processing approach to second language learning. In this theory, the learner is viewed as an active organizer of incoming information with processing limitations and capabilities. While motivation is considered to be an important element in language learning, the learner's cognitive system is central to processing. Thus, the learner is able to store and retrieve information according to the degree to which the information was processed. Evidence for aspects of the information processing model comes from studies of language processing and memory. One implication of information processing for second language acquisition is that learners actively impose cognitive schemata on incoming data in an effort to organize that data. McLaughlin et al. (1983) proposed that the learner uses a top-down approach (or knowledge-governed system) which makes use of internal schemata as well as a bottom-up approach (or an input-governed system) which processes external input to achieve automaticity. In both cases, cognition is involved, and the degree of cognitive involvement required is set by the task itself.

Spolsky (1986) proposes a model of second language acquisition based on preference rules. In his view, three types of conditions apply to second language learning, one of which is a necessary condition and the other two of which depend on the learner's preference, which could be cognitive or affective in origin. A necessary condition is one without which learning cannot take place. Examples of necessary conditions in second language learning are target language input, motivation, and practice opportunities. A

second type of condition is a gradient condition, in which the greater the degree of the condition's occurrence, the more learning is likely to take place. An example of a gradient condition might be the greater or lesser degree to which a learner actively seeks out interactions with native speakers of the target language, or the greater or lesser degree to which a learner can fine tune a learning strategy to a specific task. The third type of condition is one which typically, but not necessarily always, assists learning. An example of a typicality condition might be that risk-taking, outgoing personalities tend to be good language learners in general, though in some cases quiet and reflective learners can be equally or more effective (Saville-Troike, 1984).

Spolsky's model of second language acquisition consists of two clusters of such conditions or factors. The first cluster contains social context conditions, such as the learning setting and opportunities. The second cluster consists of learner factors, such as capability, prior knowledge, and motivation. The learner makes use of these factors to interact with the social context of learning, and this interaction leads to the amount of language learning that takes place. Thus, this model accounts for variability in second language learning outcomes through differing degrees of or preferences for application of gradient and typicality conditions. In Spolsky's model, learning strategies, while not specifically identified as such, would be part of the capabilities and prior learning experiences that the learner brings to the task.

Research in Learning Strategies

Research in learning strategies in the second language acquisition literature has focused for the most part on describing strategies used by successful

language learners. Research efforts concentrating on the "good language learner" by O'Malley et al. (1985a) and others (Naiman, Frohlich, Stern, & Todesco, 1978; Rubin, 1975; Wenden, 1983) have identified strategies, either reported by students or observed in language learning situations, that appear to contribute to learning. These efforts demonstrate that students do apply learning strategies while learning a second language and that these strategies can be described and classified.

A classification scheme proposed by Rubin subsumes learning strategies under two broad groupings: strategies that directly affect learning (clarification/verification, monitoring, memorization, guessing/inductive reasoning, deductive reasoning, and practice) and those which contribute indirectly to learning (creating practice opportunities and using production tricks such as communication strategies). An alternative scheme proposed by Naiman et al. (1978) contains five broad categories of learning strategies: an active task approach, realization of a language as a system, realization of language as a means of communication and interaction, management of affective demands, and monitoring of second language performance. O'Malley et al. (1985a) investigated the types of learning strategies reported by effective learners of English as a second language, and found that the strategies could be described in terms of metacognitive, cognitive, and social/affective processes. Oxford-Carpenter (1985) has compiled a list of the various language learning strategies identified through the aforementioned research.

A recently completed descriptive study compared strategies used by ineffective as well as by effective second language learners in various types of listening comprehension tasks (O'Malley, Chamot, & Küpper, 1988). Both

groups of students used metacognitive, cognitive, and social/affective strategies to assist comprehension and recall of the material listened to. The pattern of strategy use was quite different, however, for the effective listeners. Not only did effective listeners use strategies more frequently than did the less effective students, but they differed in the types of strategies that they preferred. Effective listeners made frequent and successful use of self-monitoring, elaboration, and inferencing, whereas ineffective listeners used these strategies infrequently. A preference model such as Spolsky's (1985), as previously described, is useful in accounting for such differences in strategy use between effective and ineffective learners. Frequency of strategy use can be seen as a gradient condition in which greater instances of strategy use are likely to be associated with effective learning. Type of strategies used can be seen as a typicality condition in which effective learners typically use particular strategies that assist comprehension and recall.

Studies of learning strategy applications in the literature on cognitive psychology concentrate on determining the effects of strategy training for different kinds of tasks and learners. Findings from these studies generally indicate that strategy training is effective in improving the performance of students on a wide range of reading and problem-solving tasks (e.g., Brown, Bransford, Ferrara, & Campione, 1983; Chipman, Segal, & Glaser, 1985; Dansereau, 1985; Weinstein & Mayer, 1986; Wittrock, Marks, & Doctorow, 1975).

One of the more important findings from these studies is the formulation of learning strategies in an information-processing, theoretical model. This model contains an executive, or metacognitive, function in addition to an

operative, or cognitive-processing, function. Metacognitive strategies involve thinking about the learning process, planning for learning, monitoring of comprehension or production while it is taking place, and self-evaluation of learning after the language activity is completed. Cognitive strategies are more directly related to individual learning tasks and entail direct manipulation or transformation of the learning materials (Brown & Palincsar, 1982). A third type of learning strategy discussed in the literature on cognitive psychology suggests that social and affective processes can also contribute to learning, which are most clearly evidenced in cooperative learning (Brown, Bransford, Ferrara, & Campione, 1983; Slavin, 1980). Learners who ask questions for clarification and interact with each other to assist learning, as well as those who are able to exercise a degree of affective control, are also conscious of using strategies which contribute to learning. Cooperative strategies have been shown to enhance learning on a variety of reading comprehension tasks (Dansereau & Larson, 1983) and in other areas of the curriculum, such as language arts, mathematics, and social studies (Slavin, 1980).

Research in metacognitive and cognitive learning strategies suggests that transfer of strategy training to new tasks can be maximized by pairing metacognitive strategies with appropriate cognitive strategies. Students without metacognitive strategies are essentially learners without direction or opportunity to plan their learning, monitor their progress, or review their accomplishments and future learning directions.

Research on training second language learners to use learning strategies has emphasized applications with vocabulary tasks. Dramatic improvements in

individually presented vocabulary learning tasks have been reported in these studies (Cohen & Aspek, 1980, 1981; Atkinson & Raugh, 1975; Pressley, Levin, Nakamura, Hope, Bisbo, & Toye, 1980). Generally, the strategy training is given individually or is provided by special instructional presentations to a group. Recently, a classroom-oriented approach to learning strategy training was studied (O'Malley et al., 1985b). In this approach, intact classes of second language students were taught to use learning strategies for three different tasks, including two integrative language tasks (listening comprehension and oral presentation). Results indicated that learning strategy instruction was associated with greater proficiency in the speaking tasks, and that learning strategy instruction also improved listening comprehension for tasks that were not beyond the students' range of competence.

A Cognitive Model of Research on Second Language Learning Strategies

One of the major difficulties in performing research with learning strategies in second language acquisition is that until recently there has been no adequate theory to describe the role of cognition in language learning, or any theoretical description indicating what influence learning strategies play on memory processes in general (O'Malley, Chamot, & Walker, 1987). Recent efforts to describe both second language acquisition and learning strategies within the cognitive theory proposed by Anderson (1981, 1983, 1985) have provided the necessary theoretical foundation to guide research in this area. Anderson suggests that language can best be understood as a complex cognitive skill and that mental processes involved in language parallel the processes used with other cognitive skills both in memory representation and in learning.

In describing memory processes, Anderson distinguishes between declarative knowledge, or what we know about, and procedural knowledge, or what we know how to do. Examples of declarative knowledge include the definitions of words, facts, and rules, including our memory for images and sequences of events. This type of knowledge is represented in long term memory in terms of meaning rather than precisely replicated events or specific language. The concepts on which meaning is based are represented in memory as nodes that are associated with other nodes through connecting associations or links.

Procedural knowledge underlies our ability to understand and generate language. Whereas declarative knowledge or factual information may be acquired quickly, procedural knowledge such as language skill is acquired gradually and only with extensive opportunities for practice. Procedural knowledge is represented in memory as production systems, which consist of a "condition" and an "action." The condition expresses a goal statement in an **IF** clause, and the action expresses a command preceded by **THEN**. For example, the following production could be used to represent a pluralization rule for Spanish:

IF the goal is to produce the plural of a noun,
and the noun ends in a consonant,
THEN produce the noun + "-es."

As goals are satisfied or change for the learner, the **IF** clause will match different sets of stored conditions, and the learner will execute different sets of actions. The rules an individual follows in acquiring a second or foreign language may be linguistic rules, rules for communicative competence, or idiosyncratic rules that emerge out of prior linguistic knowledge or

experience in trying to use the new language. Anderson (1980) has shown how production systems can be used to describe grammatical competence and O'Malley et al. (1987) have used the approach to represent communicative competence.

Anderson identifies three stages that describe the process by which a complex cognitive skill such as language is acquired: (a) a cognitive stage, in which learning is deliberate, rule-based, and often error-laden; (b) an associative stage, in which actions are executed more rapidly and errors begin to diminish; and (c) an autonomous stage, in which actions are performed more fluently and where the original rule governing the performance may no longer be retained. Thus, as the same procedure is used repeatedly, access to the rules that originally produced the procedures can be lost. O'Malley, Chamot, & Küpper (in press) suggest that second language listeners process extended oral text by alternating between stages, depending on the difficulty of a particular portion of the text.

Although Anderson does not explicitly describe learning strategies, a number of mental processes he discusses serve to explain how strategies are represented, how they are learned, and how they influence second language acquisition. O'Malley et al. (1987) indicate that learning strategies are declarative knowledge that may become procedural knowledge through practice. Learning strategies are conscious and deliberate when they are in the cognitive and associative stages of learning, but in the autonomous stage the strategies are applied automatically or without awareness. As with other complex cognitive skills, the strategies are acquired only with extensive opportunities for practice.

Viewing second or foreign language acquisition as a cognitive skill offers several advantages for research on language learning strategies. Anderson's model provides a comprehensive theoretical framework for second language learning and can be adapted to provide a detailed process view of how students acquire and retain a new language. This model can also help to identify and describe the existence and use of specific learning strategies for different types of learners at various stages in their second language acquisition. Finally, a cognitive skill model of second language acquisition can provide guidance in the selection and application of learning strategies in the instruction of second and foreign language students.

The Current Project

As was stated at the beginning of this chapter, the current project consists of three studies: the Descriptive Study, the Longitudinal Study, and the Course Development Study. These will now be briefly described.

The Descriptive Study. The project began by asking teachers of Spanish at the high school level and professors of Russian at the university level to classify their language students into three effectiveness categories: effective learners, average learners, and ineffective learners. All students were then interviewed in these groups (3-5 students per group) where they were asked to describe what strategies they used to learn the foreign language (either Russian or Spanish), focusing upon typical language learning activities such as vocabulary learning, grammar and drills, and functional practice activities. The interviews were tape recorded and excerpted later for the strategies that students discussed using. Results were reported in Chamot, O'Malley, Küpper, and Impink-Hernandez (1987). Basically, it was found

that students, regardless of effectiveness classification, were able to describe the strategies they used for language learning, and that certain differences were found between the strategies used depending upon the effectiveness and the level of study (beginning, intermediate, or advanced) of the students.

The Longitudinal Study. Students who were nominated by their instructors in the Descriptive Study as either effective or ineffective language learners were asked to participate in the Longitudinal Study, whose major data collection technique was the think aloud interview. Students were interviewed individually and given typical language learning activities such as reading a passage, listening to a dialogue, and writing a composition, which they were asked to perform while saying aloud the thoughts that passed through their minds. The think aloud interviews were transcribed verbatim, due to the depth and richness of the data, and analyzed for incidence of learner strategies. Methodology and initial findings were reported in Chamot, Küpper, and Impink-Hernandez (1988) and focused upon differences in learner strategy use of effective and ineffective students of Russian and Spanish, as well as evidence of change in strategy use over time. Extensive modification of prior conceptualizations of learning strategies resulted from these initial analyses, due to the detail available in performance data (as opposed to the retrospectively-provided data of the Descriptive Study). The listing of current learning strategy definitions provided in Exhibit I-1 has been central to the continued analyses of the think aloud interviews. Additional findings of the Longitudinal Study are reported in Chapters III, IV, V, and VI of this document, focusing primarily upon the learning strategies used by the exceptionally effective students.

The Course Development Study. This study focused upon how foreign language instructors, both Russian and Spanish, might go about instructing their students in the use of selected learning strategies. The study investigated in an exploratory nature (rather than experimental) whether learning strategies could be taught in the foreign language classroom, and whether instructors would be receptive to the idea of providing this sort of instruction. The methodology and results of the Course Development Study are presented in Chapter VII of this report.

Organization of This Report

This document presents additional findings of the Longitudinal Study (Chapters II through VI), the methodology and results of the Course Development Study (Chapter VII), and a synthesis chapter (VIII) which discusses the classroom implications of findings from the entire project. A brief overview of the chapters is presented below:

- Chapter II: Introduction and Considerations of the Longitudinal Study, including focus, selection of Spanish student data for further analyses, and considerations for analyses and interpretation of Longitudinal Study data.
- Chapter III: Additional Findings of the Longitudinal Study - Reading in Spanish
- Chapter IV: Additional Findings of the Longitudinal Study - Listening in Spanish
- Chapter V: Additional Findings of the Longitudinal Study - Writing in Spanish
- Chapter VI: Additional Findings of the Longitudinal Study - Students of Russian and the strategy of problem identification
- Chapter VII: Methodology and Findings of the Course Development Study, and
- Chapter VIII: Implications for the Classroom, where suggestions are given for how a foreign language instructor might make use of the data gained through the three studies in this project.

EXHIBIT I - 1
Learning Strategies and Their Definitions

Metacognitive strategies involve thinking about the learning process, planning for learning, monitoring the learning task, and evaluating how well one has learned.

1. Planning: Previewing the organizing concept or principle or an anticipated learning task ("advance organizer"); proposing strategies for handling an upcoming task; generating a plan for the parts, sequence, main ideas, or language functions to be used in handling a task.

2. Directed Attention: Deciding in advance to attend in general to a learning task and to ignore irrelevant distractors; maintaining attention during task execution.

3. Selective Attention: Deciding in advance to attend to specific aspects of language input or situational details that assist in performance of a task; attending to specific aspects of language input during task execution.

4. Self-management: Understanding the conditions that help one successfully accomplish language tasks and arranging for the presence of those conditions; controlling one's language performance to maximize use of what is already known.

5. Self-monitoring: Checking, verifying, or correcting one's comprehension or performance in the course of a language task. This has been coded in the think alouds in the following ways:

   - Comprehension monitoring: checking, verifying or correcting one's understanding
   - Production monitoring: checking, verifying, or correcting one's language production
   - Auditory monitoring: using one's "ear" for the language (how something sounds) to make decisions
   - Visual monitoring: using one's "eye" for the language (how something looks) to make decisions
   - Style monitoring: checking, verifying, or correcting based upon an internal stylistic register
   - Strategy monitoring: tracking use of how well a strategy is working
   - Plan monitoring: tracking how well a plan is working
   - Double Check monitoring: tracking across the task previously undertaken acts or possibilities considered

6. Problem Identification: Explicitly identifying the central point needing resolution in a task, or identifying an aspect of the task that hinders its successful completion.

(continued on the next page)

EXHIBIT I - 1
Learning Strategies and Their Definitions
(continued, page 2)

7. Self-evaluation: Checking the outcomes of one's own language performance against an internal measure of completeness and accuracy; checking one's language repertoire, strategy use or ability to perform the task at hand. This has been coded in the think alouds as:

- Production evaluation: checking one's work when the task is finished
- Performance evaluation: judging one's overall execution of the task
- Ability evaluation: judging one's ability to perform the task
- Strategy evaluation: judging one's strategy use when the task is completed
- Language Repertoire evaluation: judging how much one knows of the L2, at the word, phrase, sentence, or concept level.

Cognitive strategies involve interacting with the material to be learned, manipulating the material mentally or physically, or applying a specific technique to a learning task.

1. Repetition: Repeating a chunk of language (a word or phrase) in the course of performing a language task.

2. Resourcing: Using available reference sources of information about the target language, including dictionaries, textbooks, and prior work.

3. Grouping: Ordering, classifying, or labelling material used in a language task based on common attributes; recalling information based on grouping previously done.

4. Note-taking: Writing down key words and concepts in abbreviated verbal, graphic, or numerical form to assist performance of a language task.

5. Deduction/Induction: Consciously applying learned or self-developed rules to produce or understand the target language.

6. Substitution: Selecting alternative approaches, revised plans, or different words or phrases to accomplish a language task.

7. Elaboration: Relating new information to prior knowledge; relating different parts of new information to each other; making meaningful personal associations to information presented. This has been coded in the think aloud data in the following ways:

- Personal elaboration: Making judgments about or reacting personally to the material presented
- World elaboration: Using knowledge gained from experience in the world
- Academic elaboration: Using knowledge gained in academic situations
- Between Parts elaboration: Relating parts of the task to each other

(continued on the next page)

EXHIBIT I - 1
Learning Strategies and Their Definitions
(continued, page 3)

7. Elaboration: (continued)

   - Questioning elaboration: Using a combination of questions and world knowledge to brainstorm logical solutions to a task
   - Self-evaluative elaboration: Judging self in relation to materials
   - Creative elaboration: Making up a story line, or adopting a clever perspective
   - Imagery: Using mental or actual pictures or visuals to represent information; coded as a separate category, but viewed as a form of elaboration.

8. Summarization: Making a mental or written summary of language and information presented in a task.

9. Translation: Rendering ideas from one language to another in a relatively verbatim manner.

10. Transfer: Using previously acquired linguistic knowledge to facilitate a language task.

11. Inferencing: Using available information: to guess the meanings or usage of unfamiliar language items associated with a language task; to predict outcomes; or to fill in missing information.

Social and Affective strategies involve interacting with another person to assist learning, or using affective control to assist a learning task. The only social/affective strategy appearing in the think aloud data was:

1. Questioning: Asking for explanation, verification, rephrasing, examples about the material; asking for clarification or verification about the task; posing questions to the self.

A Key to Learning Strategy Abbreviations Appearing in Coded Think Aloud Excerpts

Abbreviation	Strategy
Metacognitive Strategies	
D Attn	Directed attention.
Plan (COMPOSE)	Planning to compose, a Hayes & Flower (1980) category.
Plan (DISC)	Planning at the discourse level.
Plan (gen)	General planning.
Plan (PL)	Planning at the phrase level.
Plan (SL)	Planning at the sentence level.
S Attn or Sel Attn	Selective attention.
S Attn (MC)	Selective attention in advance of activity.
S Attn (cog)	Selective attention during activity.
S-eval	Self-evaluation of performance or ability.
S-eval (prod)	Evaluation of one's product.
S-eval (STRAT)	Evaluation of one's strategy use.
S-eval (W/P)	Evaluation of language repertoire, focusing on word or phrase level.
S-manage	Self-managment.
S-monit	Self-monitoring.
S-monit (AUD)	Auditory self-monitoring (using the ear).
S-monit (c)	Self-monitoring of comprehension or comprehensibility.
S-monit (DC)	Self-monitoring, double-check.
S-monit (prod)	Self-monitoring of production.
S-monit (STYLE)	Self-monitoring of style.
S-monit (VIS)	Visual self-monitoring (using the eye).
Cognitive Strategies	
Deduct	Deduction
Elab (acad)	Academic elaboration.
Elab (BP)	Elaboration between the parts.
Elab (pers)	Personal elaboration.
Elab (quest)	Elaborative questioning.
Elab (world)	Elaboration to world knowledge.
Elab/S-eval	Personal remarks that include self-evaluation.
Repet	Repetition.
Tr (PL)	Translation of a phrase.
Tr (W)	Translation of a word.
Social Affective Strategies	
Q (self) or (task)	Questions to the self, or about the task.
Q (clar) or (verif)	Questioning for clarification or verification.
Other Codes	
DM	Decision is made.
☹ or Prob ID	Problem Identification.
Strat Aware	Strategy Awareness.

CHAPTER II
Additional Findings of the Longitudinal Study: Introduction and Considerations

Introduction and Focus

The purpose of the Longitudinal Study is to identify: (a) whatever differences and similiarities may exist in the learning strategies and language processing behaviors of effective and ineffective students; and (b) change in student strategy use over time. The last report of this project (Chamot, Küpper, & Impink-Hernandez, 1988) was principally devoted to detailing the methodology of the Longitudinal Study (which will not be re-presented here) and to reporting preliminary findings, using analyses of Spring 86 think aloud protocols to address the first question, and comparing Spring 86 and Spring 87 think aloud protocols to address the second. Additional Longitudinal Study findings are presented in this chapter, but the focus is shifted beyond analyses of student differences to, first, how a special group of students, deemed the "exceptional" effectives, approach such language skills as reading, writing, and listening in the foreign language, and second, what individual strategies and strategy combinations appear to be most effective for solving problems encountered in these specific skill areas. It is hoped that by examining more closely how the "exceptional" language learner works through language tasks, patterns in effective strategy use can be identified and, eventually, taught to other students.

Selection of Student Data

The results presented in the last report of this project (Chamot et al., 1988) were based upon examining the think aloud protocols of all students

interviewed. In contrast, this report restricts longitudinal data analyses to only selected think alouds, specifically, those of 8 students of Spanish who appeared "exceptional" in their effectiveness. Students were designated into this category through a combination of (a) initial teacher classification of students into the broader category of "effective language learner" (see Chamot et al., 1988), (b) the availability for each student of data from at least 3 think aloud interviews (Spring 86, Fall 86, and Spring 87), and (c) interviewer/data analyst judgment. This latter judgment was based upon qualitative analyses of how the students worked through the various language tasks across the semesters of the study, and resides upon the strong impact of the think aloud interview, which allows students to create vivid impressions of themselves and their mental processes as they think aloud. The "exceptionally" effective students are considered "exceptional" principally in comparison to other students designated into the "effective" category by teachers at the beginning of the project (see Chamot, O'Malley, Küpper, & Impink-Hernandez, 1987) and can be generally described as manifesting seemingly stronger powers of concentration, persistence, intuition, and/or flexibility of reasoning than the other effective students.

The chart below indicates the relative proportions of "exceptional effectives" in the broader "effective" category, based upon those students who completed at least three think aloud interviews. It should be noted that in the original effective category at the advanced level there were four (4) students and that all of these have been designated as "exceptional effectives." This is because, although their approaches varied, each student demonstrated an impressive fluency in reading, writing, and listening to Spanish, and so can be viewed as having been "exceptionally effective" in their language learning.

Category	Beginning	Intermediate	Advanced
Total Number of Ss in Effective Category w/3 TA interviews	10	4	4
Total Number Chosen for Category of Exceptional Effectives	2	2	4
Names of Students Chosen*	Sarah Jessica	Mary Carl	Ben Kathy Eve Theresa

* Names have been changed to ensure anonymity.

Exhibit II-1 presents a brief summary of the students selected for closer examination of their language learning behavior. In the interests of maintaining confidentiality, the names provided in the chart are not the students' own, but will be used throughout this chapter to facilitate discussion. The "exceptional" pool is comprised of: 2 beginning-level students (Sarah and Jessica), 2 intermediate-level students (Mary and Carl), and 4 advanced level students (Ben, Kathy, Theresa, and Eve), including one who was at the intermediate level in the semester the project began, but who skipped a grade the next semester up to the advanced level (Ben).

Considerations for Analyses and Interpretation

In most of the analyses that follow, discussion begins by examining how many and which type of strategies students used to perform whatever activity they were engaged in. However, as was pointed out in previous reporting on the Longitudinal Study, how many strategies a student might use for a particular task is often not as important as which strategies he or she uses, and how, and in what combination. Therefore, those numbers that are presented will serve as starting points for analyzing what highly effective and ineffective language learners do in the L2, but the emphasis of

EXHIBIT II - 1

Description of Students Designated as "Exceptional" Effectives

Student Name	Level	Prior Language Learning Experience	Other Notes Regarding Student
Sarah	Beginning	None	S had a different teacher each year of her Sp study. In year 3, she was in the class emphasizing listening skills.
Jessica	Beginning	None	S had a different teacher each year of her Sp study. None of her classes emphasized listening skills.
Mary	Intermed.	Studied Sp in elementary school. Travelled to S.A. w/parents, both of whom speak Spanish.	A 9th grader when project began. Was in intermediate class due to prior experience w/L2. Very tenacious when trying to find a solution.
Carl	Intermed.	6 years of French. Skipped Sp 2 entirely. During project, briefly travelled to Mexico and Puerto R.	From all appearances, a generally all-around excellent student, very confident and independent of approach. Describes self as a "math/science" type of person.
Ben	Advanced	4 years of Latin. Lived in S.A. as a child. During project, travelled to Ecuador (in summer) & to Spain (at Easter break).	Due to travel to Ecuador in summer, Ben skipped Sp 4, going directly from Sp 3 to Sp 5/6. Appears to have excellent study and self-regulatory skills.
Eve	Advanced	3 years of French. Lived in Mexico from age 5-8.	Retains near native-like pronunciation in Sp.
Theresa	Advanced	None	No travel to a Sp-speaking country. Has been in a class emphasizing listening skills since Year 3.
Kathy	Advanced	None	No travel to a Sp-speaking country. Has been in a class emphasizing listening skills since Year 3.

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this chapter will be on qualitative analysis which illuminates the how and which of student strategy use.

Because examination of language learning behavior is restricted to such a small number of students, these analyses should be viewed in the nature of case studies. Generalizability to the population of language learners is not of major concern in this chapter; clearly, the students chosen for these analyses (and described above) are not "typical" language students. (Data more representative of the "typical" language learner were presented in Chamot et al., 1988.) The purpose of examining these particular language learners is to identify if, within their individual learning approaches and thought processes, a broader pattern or commonality exists that might be seen as "key" to their exceptional effectiveness.

As can be seen in Exhibit II-1, many of the exceptional effectives (EEs) have either studied other foreign languages or had the opportunity to travel or live in a Spanish speaking country. Such language learning experiences, particularly the latter, are generally assumed to powerfully advance a student's proficiency in the language (Rubin & Thompson, 1982; Krashen, 1982; Ellis, 1986), and can be seen in this sample of students to have an impact (e.g., in the case of Eve, who retains an excellent accent in Spanish as a result of living in Mexico as a child). But most foreign language students learn the language in the classroom, without the occasion to travel or live in a Spanish speaking country. Are the strategies that these more "typical" language students use different from those used by students who have travelled, such as Ben, Eve, and Mary? This sub-question will be addressed when data from the 4 advanced level students are examined. Two students at that

level (Kathy and Theresa) have not had travel or other language learning experience, yet both have achieved considerable proficiency in Spanish. Their strategies and overall approach will be contrasted with those of the two students who lived in Latin America as young children (Ben and Eve).

What follows in the next three chapters, then, is an examination of what strategies and approaches were used by students for the tasks of reading, listening, and writing in Spanish. Each chapter begins with a review of the research for that skill area and a summary of prior Longitudinal Study findings, then discusses how the exceptionally good learners performed that skill, with emphasis given to particularly effective or unusual strategy use. Each chapter concludes by describing other pertinent findings in regard to student strategy use and learning behavior.

CHAPTER III

Additional Longitudinal Study Findings: Reading in Spanish

Review of the Literature

In the past, the skill of reading has been interpreted as residing upon the reader's ability to decode words and thus glean the author's message. Current opinion is that while reading certainly involves decoding and while efficiency in this area is important, if not critical, to the reading process, the process itself requires far more of the reader than decoding skill (Garner, 1987; Orasanu & Penney, 1986). Reading is seen as a highly complex interaction between the text and the reader. To the task of interpreting the author's words the reader brings his or her own background knowledge, opinions, skills, motivation, and expectations (Wittrock, Mark, & Doctorow, 1975; Carrell & Eisterhold, 1983), all the while operating within very real human information processing limitations (Anderson, 1985; Hall, White, & Guthrie, 1986; McLaughlin, 1987). The meaning of the text, then, is not so much "found" by the reader as it is "built" through the reader's predicting, judging, remembering, inferring, selecting, confirming or disconfirming, and revising impressions as he or she moves through the task (Gagné, 1985; Garner, 1987).

Research on differences between good and poor readers has identified monitoring of comprehension as a critical strategy in the reading process, with good readers being far more aware than poor readers of when they are not understanding the text (Block, 1986; Garner, 1987). Differences have also been found in what good and poor readers choose to do when a

comprehension breakdown occurs: Good readers, more than poor readers, tend to deploy strategies to clear up the problem, such as reading on to search for a clue, keeping the problem in mind for later clarification, re-reading the text, or consulting another source, be that a book or a person (Alessi, Anderson, & Goetz, 1979; Brown, Armbruster & Baker, 1986).

Review of Prior Longitudinal Study Findings

While the above-mentioned research has focused primarily upon reading in the native language, the current project has found that many of the same reading principles are operative when a person reads in a foreign language. Specifically, the process is interactive, with the reader's own skills and experiences being deeply involved in the generation of text meaning. Within this study, the use of prior knowledge is generally known as elaboration, and can include using such sources of insight as academic, world, or personal experiences, or finding relationships between the parts of the text being read. Using prior knowledge is also very much a part of the strategies of transfer (using prior linguistic knowledge, for example, to infer meanings of words based on their similarity to English or to other words in Spanish), deduction (applying rule-knowledge), and certain applications of grouping (specifically, recalling groups that were formed based on some common attribute).

As with native language reading, the strategy of monitoring for comprehension is essential for skilled foreign language reading. Preliminary longitudinal findings (see Chamot et al., 1988) indicated that self-monitoring in foreign language reading assumes different forms (auditory, visual, double check) and is done for different reasons or with different foci (comprehension, production, style, strategies being used). Good language

learners appear to monitor in qualitatively different ways than poor readers, although they may not always monitor more. Differences were found in the number, type, and/or purposefulness of the strategies effective learners deployed to correct problems discovered through monitoring. This certainly confirms what native language reading research has found: that fix-up strategies often serve a crucial function in reading comprehension.

Summed up, differences between the reading behavior and thought processes of the project's effective and ineffective language learners show that the effective student tends to be extremely involved in an active search for meaning in the passage, while the ineffective student tends to become"grounded" in the decoding of words. This "grounding" of the ineffective learner seems to arise in part from lack of familiarity with words encountered in the passage and in part from employing a reading approach that moves the student forward word by word, with little attempt at integration of meaning between words, let alone sentences. This poor foreign language reading performance resembles both what is known about early reading behavior (grades 1-3) where word decoding is a skill still requiring practice in order to achieve automaticity (Anderson, 1985; Carpenter & Just, 1986; Hall, White, & Guthrie, 1986), and what is known about the poor native language reading performance of many adults, which is often typified by slow decoding that disrupts fluent reading and results in the reader missing "contextual information" that should signal a breakdown in comprehension (Brown, Armbruster, & Baker, 1986, p. 53). What is unclear, however, is whether the ineffective students in our sample so often failed to search for or find more global meaning in text passages because they, like some young children, think that the skill of reading stops at decoding, or

because the process of decoding is so laborious that the ineffective student has no "processing space" left over for the generation of meaning. This latter reason would be suggested by cognitive theories of reading (Anderson, 1985; McLaughlin, 1987). These questions will need to be pursued in future research. Meanwhile, what the "exceptional" effectives do when reading in Spanish will be addressed in the next sections of this chapter.

The Reading Tasks

In Spring 1986, the starting point of the study, the first think aloud interviews required students to read a cloze passage where many of the verb forms and some nouns were omitted. The students' task at each level of Spanish study was to fill in the blanks with an appropriate word or conjugation of the verb (the infinitive was provided). In Fall 1986, the second think aloud interviews were conducted; students were again asked to read a cloze passage, but this time word omissions were not limited to verbs or nouns but comprised many other types of words, such as adverbs, prepositions, and adjectives. Analyses of how the students approached these cloze activities indicated that all students, even the exceptional effectives, relied heavily upon the strategies of deduction and translation. Because it was becoming evident that the nature of the task has an important influence upon strategy choice, it was decided that subsequent data collection sessions (Spring 1987 and Fall 1987) should include a reading activity where no words were missing. In these sessions, then, the students were asked to read an intact selection and say their thoughts aloud as they did so. Of interest here was whether students would approach this more "native-like" reading task with different strategies, specifically less translation and use of rule-based

knowledge, and in a more global, less sentence- and phrase-bound, way. Both the cloze and intact reading selections are described in Exhibit III-1.

The "Exceptionally" Effective Student, and Reading in Spanish

The major question to be addressed in this section is: what strategies and/or approach contribute maximally to reading comprehension in a foreign language? Because students did two types of reading, this question becomes a series of sub-questions:

(a) what strategies and overall approach did students use to complete a cloze passage?

(b) what strategies and overall approach were used for reading an intact passage?

(c) what are the differences and similarities between the two?, and finally

(d) what strategies and/or approach contribute maximally to reading well in a foreign language?

Reading and Completing a Cloze Passage. The left hand column of Exhibit III-2 lists a rank ordering (and percent usage) of cloze strategies used by the two beginning-level EEs, the two intermediate-level EEs, and the 4 advanced-level EEs. These data are drawn from Spring 1987 think aloud sessions and represent averages of each student group's strategy usage. Although Spring 87 was the third data collection point in the study, it is also the one where "intact" reading was done for the first time, as well as being the semester for which student data were the most complete, thus making it the most useful data for examining and comparing in depth how students perform both types of reading activities. As a reminder, students at the different levels of study read different cloze passages.

EXHIBIT III - 1

Summary of Reading Tasks: Cloze Work and Reading Alone

Semester	Level	Title of Passage	Length and Content of Passage
Spring 86	1	Typical Day for Juan & Rosa (Cloze)[a]	128 words (9 missing). Juan talks about his typical day, from getting up to going to bed. Emphasizes daily vocabulary.
	3	Juanita's Trip to[b] Madrid (Cloze)	121 words (11 missing). Juanita describes her trip to Madrid, where she visited her cousin Clara.
	5	Los desaparecidos[c] (Cloze)	170 words (9 missing), 3 paragraphs. Commentary about youths that disappeared in the old days (to achieve independence) and how openly youths of today live independently from their parents.
Fall 86	2	Radio Hidalgo[d] (Cloze)	139 words (13 missing). A student radio announcer gives school news, some events, & updates weather.
	4	Te Habla Un Gitano[e] (Cloze)	154 words (13 words missing). A male gypsy talks about the world view of gypsies (that they don't work) & about their own view (that they're free & proud to be artists).
	6	Apocalipsis	Not analyzed; students had read passage in class.
Spring 87	2	No title provided. Interviewer gave brief introduction. (Intact reading)[f]	165 words (none missing). Continuation of a dialogue listened to by the students in the previous semester, but "stand-alone" (not requiring memory of prior info). Two gossipy women talk in the kitchen about the new neighbors. 8 interchanges, for a total of 25 sentences.
	2	Teresa Pimental, Médica[g] (Cloze)	196 words (19 missing). 22 sentences. Description of a young doctor, what she does during the day & how she feels about her profession.
	4	Bomba de Humo[h] (Intact reading)	107 words (none missing). 7 sentences, 2 paragraphs. Description of a security system for transporting money - a smoke bomb that stains the money & attracts attention.
	4	Cómo Defenderse[i] de las Mujeres (Cloze)	188 words (16 missing). 17 sentences, 7 short paragraphs. A man's list of suggestions for how other men can avoid being trapped by marriage-minded females.
	6	No title provided.[j] (Intact reading)	125 words (none missing). 6 sentences, 3 paragraphs. Description of an attempt by Scotland Yard to identify Jack the Ripper by using an old superstitution, that the eyes of the person killed retain an image of the killer.
	6	La Rana y El Buey[k] (Cloze)	347 words (25 missing). 20 sentences, 8 paragraphs. Story about an ox drinking water in a pond, & the vain father frog who tries to frighten it away.
Fall 1987	3	(Intact reading)[j]	Same reading as Sp6 in Spring 87; Jack the Ripper.
	3	Cómo Defenderse[i]	Same cloze reading as Sp4 in Spring 87.

a-k: See Appendix A for a listing of sources for these reading activities.

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EXHIBIT III - 2

Rank Ordering of the Strategies Used by "Exceptional" Effectives
in Reading Cloze and Intact Reading Activities

Level Of Study	Reading Cloze	(*)	(%)	Reading Alone	(*)	(%)
Beginning	Translation	22.0	26.8	Translation	14.0	28.6
(Spanish 2)	Self-monitor	15.0	18.3	Self-monitor	8.5	17.3
(n=2)	Elaboration	9.0	11.0	Elaboration	7.5	15.3
	Inferencing	7.5	9.1	Inferencing	5.0	10.2
	Others	28.5	34.8	Others	14.0	28.6
	TOTAL:	82.0	100.0	TOTAL:	49.0	100.0
	Metacognitive	20.5	25.0	Metacognitive	15.0	30.6
	Cognitive	56.0	68.3	Cognitive	32.5	66.3
	Social/Aff	5.5	6.7	Social/Aff	1.5	3.1
Intermediate	Self-monitor	14.5	30.9	Self-monitor	10.0	23.0
(Spanish 4)	Translation	9.0	19.1	Translation	9.5	21.8
(n=2)	Elaboration	8.5	18.1	Elaboration	7.0	16.1
	Deduction	6.5	13.8	Inferencing	4.0	9.2
	Others	8.5	18.1	Summarizing	3.5	8.0
	TOTAL:	47.0	100.0	Others	9.5	21.8
				TOTAL:	43.5	100.0
	Metacognitive	16.5	35.1	Metacognitive	15.0	34.5
	Cognitive	29.5	62.8	Cognitive	26.5	60.9
	Social/Aff	1.0	2.1	Social/Aff	2.0	4.6
Advanced	Self-monitor	7.5	26.3	Self-monitor	5.8	31.1
(Spanish 5/6)*	Elaboration	5.3	18.4	Elaboration	3.3	17.6
(n=4)	Self-evaluation	2.8	9.6	Questions	2.0	10.8
	Deduction	2.5	8.8	Inferencing	1.8	9.5
	Inferencing	2.3	7.9	Others	5.8	31.1
	Summarizing	2.0	7.0	TOTAL:	18.5	100.0
	Questions	2.0	7.0			
	Others:	4.3	14.9			
	TOTAL:	28.5	100.0			
	Metacognitive	11.5	40.4	Metacognitive	7.3	39.2
	Cognitive	15.0	52.6	Cognitive	9.3	50.0
	Social/Aff	2.0	7.0	Social/Aff	2.0	10.8

* Technically, one student was in Spanish 5 (due to his skipping Sp4), while the other 3 students were in Spanish 6. But the classes were combined, & the tasks were the same for all students. Also, the figures reported here for the cloze activity are calculated only on the first 6 sentences, which all students had time to complete.

Beginning				Self-monitor	23.0	21.4
(Spanish 3)				Translation	20.0	18.6
Fall 1987				Self-evaluation	16.0	14.9
(n=2)				Inferencing	14.0	13.0
				Transfer	9.0	8.4
				Deduction	7.5	7.0
				Elaboration	7.5	7.0
				Summarizing	6.0	5.6
				Others	10.0	8.9
				TOTAL:	112.5	100.0

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The strategies of self-monitoring and elaboration are clearly important in cloze work, appearing in the four most-used strategies by students at all levels of study. Inferencing, translation, and deduction are also highly used by these students, with translation seeming to appear on a continuum of diminishing use as level of study and L2 proficiency increase. Although the numbers of students here are very small, it is interesting that beginning level students supplement their translating with guessing at words and overall meaning (inferencing), while intermediate level students supplement their translating with applying rules (deduction), while the most advanced students translate very little and, instead, use a mixture of guessing and rules (inferencing and deduction). This progression in strategy use by level is illustrated in Exhibit III-3, which presents three think aloud excerpts and the coding they received.

In the first example, the lower level student (Sarah) starts translating as soon as she starts reading, and accurately supposes that a number of words (e.g., husband, brother, friend) would be appropriate for the blank. Although she does not say how she reached this conclusion, it evidently resides on the world knowledge (elaboration) that Pedro can be related to Teresa in a number of different ways. So that the meaning of the text will remain consistent (monitoring comprehensibility), Sarah reads the rest of the paragraph looking for an indication of whom Pedro might be (inferencing). Finding no reason to believe that Teresa is married to Pedro (elaboration between parts), she makes the decision (DM) to "make it her brother" and fills the blank with the word "hermano."

EXHIBIT III - 3
Excerpts from Reading Cloze Think Alouds
of Beginning, Intermediate, and Advanced Spanish Students

Beginning level (Year 2):
Sentence being studied: Si tiene tiempo, Teresa almuerza con su ____, Pedro.
If she has time, Teresa eats lunch with her ____, Peter.

[a When she has time to eat lunch con su...con her. [b it should be her brother or her husband. Hmm. (Int: How are you deciding?) [c Trying to, like, reading the rest of the paragraph without the, like, trying to do it without the blanks being filled. (Mumbling to self) [d Well, make it her brother, since there isn't really any (thing) about being married. (Fills in hermano) (Sarah)

a) Tr (PL)
b) Elab / Inference
c) S-monitor
Inference
(reads on)
d) Elab (BP)
DM

Intermediate level (Year 4):
Sentence being studied: ¿Puede un hombre __(hacer)__ algo contra eso?
Can a man (do) something against this?

¿Puede un hombre (blank) algo contra eso? [4a Can a man do something against this? Puede un hombre hace algo contra.. [b can a man do something against this, I don't know. [c I'm going to leave it blank there for a second, because I don't know what they are getting at there with the sentence.

(Goes on to next sentence) Tiene el que blank la victima. [5a does he have to be, okay, I guess, does he have to be the victim... (fills in ser, then returns to previous blank) [4d I'm thinking this, then, has to be hacer or something like that. (re-reads sentence) I'm thinking, [e do I have to conjugate it or could this be the infinitive? Cos there's already one conjugated verb there. (Mary)

4a) Tr (SL)
b) Tr (SL)
c) DM
S-monitor
5a) Tr (PL)
4d) Elab (BP)
Inference
e) Q (self)
Deduction

Advanced level (Year 5/6):
Sentence being studied: Pero el padre rana __(le)__ echó una mirada desdeñosa.
(But the father frog threw (her) a disdainful look.)

Pero el padre rana (blank) eko una mirada desdeñosa (mis-reads "echó", saying it like the English word "echo"). I'm thinking about the blank. Something eko. [a I'm going to go back, cos I remember that type of phrase back here... (Returns to an earlier sentence containing "echó") ...ranita eko a nadar. okay, so I'm going to come back here and try to apply that. Pero el pobre padre rana (blank) eko.. [b maybe an object would fit in there. [c I'm not sure I understand this sentence, so I'm going to read on.

(Reads next two sentences, fills in one blank, then returns to this problem) [d Now I'm going to try and go back and see what this is. Pero el padre rana and [e I don't know what echó (correctly said)...I do know what echó is. Echar. [f Echó a nadar, I guess it can be a way of throwing himself into the water to swim there. [g So over here, el padre rana blank echó, hm, una mirada, [h okay, I know what it is. I didn't know what desdeñosa was, so I didn't understand. [i It has got to be some smirky type of a look. He threw her a look...(fills in "la"). [j That's an idiom I've never heard before. (Ben)

a) Elab (BP)
b) Deduction
c) Inference
(reads on)
S-monitor
d) S-management
e) S-eval (W)
Deduction
f) Inference
g) Elab (BP)
h) S-monitor
S-eval (W)
i) Inference
Summarizing
j) Elab (quest)

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In the second example, the intermediate level student, Mary, also relies on translation, immediately rendering an English equivalent of the entire sentence, which gives her the word in English that would correctly fill the blank. Word in hand, she moves back to Spanish (do - hace). But she is uncertain of the meaning she has generated for the sentence (self-monitoring) and decides to skip the blank for the moment (DM) and read on, again translating as she goes. When she returns to the problemmatic blank, she postulates the same solution as before, but wonders whether hacer should be conjugated or left in its infinitive form, because "there's already one conjugated verb there" (deduction). This type of metalinguistic analysis is typical of both Mary's cloze work and Carl's, the other EE at the intermediate level. Both students show themselves to be highly aware of the functions of words in sentences and they use this knowledge to help determine what word or form of a word is needed in a blank.

Ben, the advanced level EE, manifests a similar awareness of word function ("maybe an object would fit in there") but relies upon it far less as a means of determining what might go in the blanks. He is primarily concerned with getting a sense of the story being told and is not unduly troubled by words or phrases he does not know unless they impact upon his overall understanding of the story or upon filling in the blank. This is illustrated in the example presented in Exhibit III-3, where he becomes concerned about the meaning of "echó una mirada desdeñosa" because he cannot fill in the blank without understanding the phrase. He recalls that, earlier in the story, he had encountered a similiar phrase, "echó a nadar" (which he had ignored because its meaning was not pivotal to filling in the blank or to his understanding), and he returns to it now with the idea of somehow

comparing the two phrases and their contexts to glean the meaning of "echó", which he is mis-reading as "eko." However, the comparison (elaboration between parts) does not help, so he reads the next two sentences (inference), and then returns to the problem. In re-reading the sentence he repairs his mispronunciation and, presumably hearing himself say "echó" correctly, realizes what the word is (a form of echar). This insight empowers him to make very good inferences of what the troublesome phrases mean. Arriving at precise translations does not appear to interest him; rather, his inferences and meaning summaries (i.e., "it has got to be some smirky type of a look") are sufficient for understanding and, satisfied, he moves on in his reading.

These examples show that for the purposes of inferencing and self-monitoring, one form of elaboration that is useful in cloze reading is looking for relationships between the parts of the passage. When each of these effective students encountered a difficulty in one area, they looked to other parts of the text for clues, a strategy that has been shown to facilitate reading comprehension in the native language (Garner, 1987) and which appears to be equally effective in foreign language reading. A summary of the types of elaboration used in the Spring 87 cloze work is presented in the chart below:

Type of Elaboration	Beginning (n=2)	Intermediate (n=2)	Advanced (n=3)*
Personal	3	5	19
Academic	6	0	5
World	3	1	10
Between Parts	5	8	21
Other	1	3	9
Total (Raw Count)	18	17	64
Average	9	8.5	21.3

* One of the 4 advanced level EEs completed only 6 sentences of the cloze. These figures are for the 3 students who read the cloze in its entirety.

The high instance of personal elaborations at the advanced level is largely due to one student's (Eve) propensity to interact with the story in a dramatic way; as she reads, she makes noises that correspond to the mood of the text ("Mira que horror de bestia, WHOOOO!") and judgments about the content ("it's kind of funny to think of a frog calling another frog his daughter"). Uses of the other types of elaboration are more evenly distributed across students; in other words, all of the students made use of the native-like reading strategy of elaboration between parts (generally called text look backs in the reading literature) to resolve difficulties. These readers also brought their world knowledge to bear on the task, as in the advanced level student (Ben) who makes a swift assumption (inferencing) that "buey" in Spanish is equivalent to the English word "buoy" (transfer) and then, continuing the phrase, reads "que estaba en el agua hasta las rodillas bebiendo muy contento" ("that was in the water up to its knees drinking very contentedly"), which forces him to revise his guess (self-monitor) because "a buoy isn't drinking" (world elaboration). Also useful was academic knowledge, as when Sarah fills in a blank with the word "hospital" and briefly re-considers this (self-monitoring) before going on: "I wasn't sure if they wanted the name of a hospital or something, so I was trying to think, like, in the culture things, if they'd ever said anything about certain hospitals." Often, it seems, the world and academic elaborations take place in combination with self-monitoring, as the students' means of verifying their own understanding or the answer they have decided to put in a blank.

In regards to whether differences appear in how the two subgroups of advanced level EEs (those who had lived in Latin America and those who had

not) proceeded through the cloze reading, the following chart breaks down each subgroup's use of the major strategies listed in Exhibit III-2:

Strategy	Students w/Travel & Other Language Learning Experience (Ben & Eve)	Students with Only Classroom Language Learning Experience (Theresa & Kathy)	TOTAL (n=4)
Self-monitor	8.0	7.0	7.5
Elaboration	4.5	6.0	5.3
Self-evaluation	3.0	2.5	2.8
Deduction	2.5	2.5	2.5
Inferencing	1.0	3.5	2.3
Summarizing	2.0	2.0	2.0
Questions	1.5	2.5	2.0
Others	4.5	4.0	4.3
TOTAL*	27.0	30.0	28.5

* Total is for the first six sentences only.

Apparently, little difference in strategy use appears for these students of varying types of language learning experience. All students read inquiringly, noting new information for their Spanish repertoires or contrasting it with what they already knew:

> Theresa (reading sentence 1): Es de noche. This is ... de noche is kind of strange ... cos I've never had this construction before, de noche. I'll just hear plain old noche, but I know what it means. And I'm thinking, well, es de noche, they can't really say es noche. That's kind of ... it doesn't sound right.
>
> Kathy (reading sentence 10): It's saying that he is a little fat. But I've never seen algo put in front of gordo before.
>
> Eve (reading sentence 2): ... pero Teresita y yo - Teresita? Un nombre nuevo. I've never seen that form of Teresa before.
>
> Ben (reading sentence 14): He threw her a look, that's an idiom I've never heard before.

Students at lower levels of study seldom made remarks like these which imply that a process of active comparison and integration is going on. This type of thinking may be linked to automaticity in the L2; these upper level students showed much evidence that their knowledge of certain aspects of the language had progressed to the automatic or near-automatic point:

Phrase being read: Un día la ranita más __(pequeña)__ vino nadando ...
Translation: One day the smallest little froggie came swimming...

Ben: Más what? Más pequeña. Cos it's an "-ita", that would mean probably the youngest and it's got to be más something.

Eve: It's probably pequeña, well, let's see, cos they said ranita... (reads on through end of phrase, then returns to blank) I'll go back here and put pequeña so I don't have to think about that anymore.

Theresa: Un día la ranita, I'm thinking ranita, that's kind of "little frog." La ranita más, I'm thinking it's an adjective. (reads on through entire sentence) Okay, what kind of frog is this frog? La ranita más... más pequeño, but "-ita", that says pequeño... It seems redundant to me. (reads through rest of phrase) I'll just put pequeña in here.

Kathy: Un día la ranita más... since they are calling it ranita, it must be más pequeña.

The above examples also illustrate how similarly the students reasoned. This was apparent throughout the cloze exercise; they stumbled over the same problem areas (i.e., the meaning of hincharse, a pivotal word for understanding the story's ending) and often tried to resolve difficulties in the same way (i.e., reading on to look for a clue or guessing based on logic and context). Below is an excerpt drawn from Kathy, whose language learning was limited to the classroom; she is reading the same sentence addressed by Ben (who had lived and travelled in Latin America) at the bottom of Exhibit III-3.

Kathy: Pero el padre rana (blank) echó una mirada desdeñosa... ... had to stop, how to pronounce that. And what to put in front of the blank. I'm trying to sort the sentence out to get the idea. (Int: How?) Well, first I looked through it in Spanish to see if any words came to me and they didn't, so I'm going to have to translate it. It says: But the father frog something, hm, echar, I don't know what it means in English, but I know what it means in Spanish. I guess it's kind of like gives... a... desdeñosa, I don't know what that means, I guess it's kind of like distasteful or displeased or something like that. It is not good.

While Ben choses to look back in the text and compare the two uses of "echó", hoping to infer its meaning, Kathy resorts to translation when she finds she does not understand. Although these two approaches differ, in the end the reasoning of the two students follows similar paths. They both generate an approximate meaning for "desdeñosa" and are satisfied with that. It is interesting that Kathy becomes bogged down in her attempt to translate, finding that while she knows what "echar" means in Spanish, its English equivalent is not so readily available to her. Thus, it appears that, regardless of the type of exposure these students have had to Spanish, at this advanced level there are only small differences in their approach to reading cloze and that they construct a text's meaning based on very similar reasoning.

Reading an Intact Passage: Comparisons with Cloze Reading. Presented in the right column of Exhibit III-2 is a rank ordering (and percent usage) of the

strategies students used at each level of Spanish study to read an intact (non-cloze) passage. What is immediately apparent in the ordering is its similiarity to the rank ordering of strategies for reading cloze: students, particularly at the beginning and intermediate levels, appear to rely on the same strategies for reading cloze and intact passages, namely translation, elaboration, inferencing, and self-monitoring. At the intermediate and advanced levels the use of deduction found in cloze has been supplanted by use of inferencing.

While the similarities in these two sets of numbers indicate that the same basic processes are at work in reading a cloze and an intact passage, they are also somewhat misleading, because closer examination of the think aloud protocols reveals that qualitative differences do exist in how students read these two types of passages. In regards to the beginning level students, both Sarah and Jessica were far more likely to ignore words they did not know when they were reading an intact passage than a cloze. They were also more likely to try and infer what the word might mean from its surrounding context. As an example of this:

Sentences being read: "El teléfono suena. Amelia contesta." or "The telephone rings. Amelia answers."

El telefó- teléfono suena, suena, I don't remember the meaning of that, I'm just guessing rings just because that's the normal thing. Then Amelia contesta, I don't know contesta either. Maybe it means answers. Yeah, it does, or I guess it does, because here she's talking on the phone. (Jessica)

Neither student looked in the dictionary for a word's meaning when reading the intact passage, but both did when working the cloze. Without the necessity of filling in blanks, it appears as if both learners felt an

approximate meaning of an unknown word was sufficient, particularly those words that they decided were not critical to the overall meaning of the text. The name "Amelia del Paso", for example, caused nearly all beginning level students difficulty; most of them struggled over what this unfamiliar construction and the following "Se llaman Campos" ("They're called Campos) might mean, while both EEs had the same reaction: They read on without belaboring the matter.

Sarah: I figured that it was just "and something." So it didn't really matter. Se llaman... I can't remember what that means. Hm, so I'll just forget that part.

Jessica: Amelia del Paso is kind of strange. It doesn't exactly look like a name. Someone of... oh, maybe that's of a city. They are called Campos, and I don't know what Campos means. But I guess that's just some way of introducing them, because they give the names next."

This skipping of unknown and seemingly unimportant words, or making a "ballpark" inference of their meaning, is also very much a part of the approach taken by the two intermediate level EEs to intact reading. "Bomba de Humo" is a two paragraph passage about a smoke bomb system used to protect the transport of large sums of money against robbery; in many ways, it resembles more content-type reading, where facts rather than a story line are presented, and it elicited from both students their world knowledge (elaboration) of defense systems and how they work, even down to how the fire alarm system in their school identifies the person turning in a false alarm and how pranksters circumvent it. As in cloze work, these world elaborations help them to stay on target in their understanding of the passage and to make inferences of what seemingly important words might mean.

Sentence being read: "Cuando uno de los guardias que transportan el dinero es atracado por alguien, hace estallar la bomba."
Translation: "When one of the guards transporting the money is attacked by someone, it makes the bomb go off."

Carl: When one of the guards who is driving the money around es atracado, I don't know what it means, but I assume it's attacked or something, cos that's what is going to happen if they need the system ... By somebody he, estallar is, I assume, lets off, makes it go off, the bomb.

Mary: Hmm, okay, when one of the guards is transferring the money, hmm, es atacado (sic) por alguien ... I guess that means they are scared or something, or concerned with something. They can let off the bomb. I don't know what estallar means, but I guess, what do you do with a bomb? You throw it and explode it.

That these students used their background knowledge to help themselves make sense of the passage corroborates what Lee (1986) found but disagrees with the findings of Carrell (1983) about the extent to which background knowledge influences L2 reading comprehension. Both of those studies, however, used recall as a measure of comprehension; the Longitudinal Study tracked the reading process, not how well students could recall what they had read, and so can only say that, when they are on-line and reading in a foreign language, these highly effective students certainly applied their prior knowledge to the comprehension process.

Elaboration, then, serves a valuable role in guiding comprehension in L2 reading, as well as increasing the student's ability to draw logical inferences or conclusions. This finding supports what Bernhardt (1984) calls the "schema-theoretic view", which "argues that 'inside the head' factors determine the interpretation of discourse" (p. 325), and lends support to current conceptualizations of cognitive psychologists that memory is organized by schema and accessed through spreading activation (Anderson,

1985). Failing to make the appropriate connection (elaboration), in fact, can lead to a breakdown in comprehension (Carrell & Eisterhold, 1983), as the example below illustrates.

Sentence being read: El humo inmediatamente atrae la atención y, además, un tinte de color rojo se extiende sobre el dinero, lo cual permite su identificación posterior.

Translation: The smoke immediately attracts attention and, moreover, a red stain spreads over the money, which permits its later identification.

Carl, having understood well to this point: Smoke immediately attracts the attention, but I don't know whose attention. And also, whatever, some red color extends over the money which permits its identifcation ... posterior? See, that makes no sense to me, I don't know what they are trying to identify. (he goes on, trying to figure this out through deduction; that part of the think aloud is presented further below)

The interviewer finally tells him: El dinero. (The money)

Carl: Trying to identify el dinero? Why do you want to identify el dinero?

His failure to make the logical connection to a "Defense Systems Against Robberies" schema, which in all likelihood should include the notion of "marked money", makes it impossible for him to understand globally what he is reading, although he adequately understands or can infer the meanings of individual words. That this critical piece of information was in his memory all along is apparent, though, in his immediate recognition of the interviewer's explanation of marking money. "Oh!" he says. "I see."

One interesting aspect to this particular problem is how Carl attempted to resolve his comprehension breakdown. In his cloze work his reading seemed very much driven by grammatical analysis (i.e., what part of speech the blank called for) and, thus, rule-application (deduction); in intact reading,

however, the only time he applies rules in order to understand is at this comprehension juncture.

Carl: ... Attract somebody's attention ... atrae la atención ... I'm trying to find out whose attention, I assume there ought to be some indirect object there. (Int: Where?) Before atrae, because it's somebody's attention, but I don't know whose. I also don't know what they want to identify. I assume lo goes to dinero, because nothing else is ... or it could be tinte, I guess ... that it's referring to ... That permits ... it has to be masculine and it wouldn't make sense it's lo cual, so you are talking about the same subject and tinte was the subject over there, so ... But I don't know what they are trying to identify.

Confused, he attempts to unravel the puzzle by pinpointing the two specific ideas he does not understand (problem identification); he then goes on an analytical search of the sentence's grammar, looking first for "some indirect object" that will tell him whose attention is trying to be attracted (problem #1), and then trying to determine what part of the sentence "lo cual" refers to, which he thinks will tell him what is trying to be identified (problem #2). He correctly realizes that "lo cual" is linked to "tinte", the subject for that part of the sentence, but this does not give him the information he needs to resolve his confusion and so he ends up where he began, baffled.

The fact that the use of deduction tended to fall off in the reading of intact L2 passages, as opposed to cloze reading, supports initial researcher hypotheses that the nature of cloze work pushes students to reason in this way.

Another issue of concern was that the cloze, because of the blanks to be filled in, might also be forcing the student to translate and that the pattern of strategy use that emerged for cloze work (and that was reported in Chamot et al., 1988) might be a distortion of what students typically do when they read something intact. How much students would translate an intact reading passage, as opposed to a cloze, was one of the major reasons for including it in the think aloud sessions.

Comparing the translation figures in Exhibit III-2 for the two types of reading indicates that the strategy plays very similar roles in each. As in the cloze work, a pattern of diminishing use of translation can be seen in intact L2 reading as proficiency and level of study go up: lower level EEs relied upon translation the most, and advanced level EEs used the strategy barely at all. But in the intact reading think alouds it was sometimes difficult to tell whether the intermediate level students were actually translating versus speaking aloud in English, because that was the medium of the interview. In fact, both intermediate EEs mentioned that having to think aloud made them translate more. A more accurate picture of their reliance on translation for intact reading is probably along the lines of Carl's explanation: "But I do have to do that (translate) if I get stuck. Like at the end, or when I don't know some words, I have to translate to see what those words probably mean. But if I know all the words, then I can go right through." Therefore, the actual translation figures for how the intermediate level EEs read alone may be overly inflated, a coding difficulty that was reported in Chamot et al. (1988). This coding difficulty seems isolated principally at the intermediate level, though; beginning level EEs readily admitted to translating as they read. If qualitative differences exist in their translating behavior, it is that

the translation during intact reading appeared more fluent (less laborious) than the translating done in cloze work. And, as has been said, they were more willing to guess at the meaning of words in intact reading, rather than struggle over getting a precise meaning as in cloze.

Included at the bottom of Exhibit III-2 is a rank ordering of strategy use of the lower level EEs reading an intact passage in Fall 1987, the fourth and final data collection point of the study. These students are no longer to be considered beginners; they are now enrolled in the first semester of Spanish 3 and, in keeping with their increased proficiency and level of study, might be expected to exhibit a corresponding decrease in their reliance on translation. This is partially the case with Jessica, who says, "See, I've been doing this lately. I've been trying to read without translating" but "I didn't catch much of it, so now I'm kind of going back." In this, her approach resembles Carl's: she first attempts to read fluently, staying with the Spanish, but when she becomes aware that she is no longer understanding, she looks back over the text and translates. At the same time, though, she is aware that understanding what she is reading must go beyond word-for-word translation: "That seems to translate literally," she says of one sentence, adding, "Now I'm trying to make actual sense of that. ... I want to see if my translations, which I'm kind of getting just by taking English cog- the word that resembles it, whether that makes any sense." She goes on to transform her literal rendering into a summary that captures how the sentence fits in globally with the rest of the paragraph: "So I suppose that when you die the, um, the last person you see is saved in your mind, or in your eyes. Maybe that's the superstitution." This application of

summarization is a new development in her reading approach, and supplements her translations nicely.

Also very much in evidence in Jessica's intact reading is a continued willingness to infer the meanings of words or to postpone guessing until she has more clues as to either the word's meaning or its importance in the passage, as in "I'm not sure about los ase-sinatos, what that means. I guess I'm going to figure that out later" and then, one sentence later "Now I think I have more of an idea of what los asesinatos means." Similarly, she skips over the entire phrase "basándose en esta leyenda" because she first assumes she'll discover its meaning as she reads and then, later, because she has decided it is not important to know. She also resorts to grammatical analysis (deduction) when her understanding breaks down (again, like intermediate-level Carl), as in "I was thinking that loco ... I was thinking the word would be a verb or something, and then they were making an adverb. I guess it's still an adverb." In fact, what characterizes Jessica's intact reading performance in Fall 1987 is the sequence of learner strategies that she applies when she does not understand what she is reading. When one strategy does not solve her problem, she tries another, and then another, and does not appear willing to let the problem go, even if she temporarily postpones resolving it. This is illustrated in the think aloud excerpt presented below, which relates to her reading of the last line in the "news item" about Scotland Yard's attempt to identify Jack the Ripper. She is working only on the first part of the sentence, "Claro está que no dio resultado" which means "Of course, it (Scotland Yard's method) gave no result (was unsuccessful)."

J: Still working on this construction here.
Int: (observing) Claro está que no dio resultado.
J: Yeah. Of course it is that no... and then that seems to be a verb, so...
Int: (to verify) Dio.
J: Gave... and that seems to be, that's why I'm working on the construction, cos I have to understand that before I can really get past it. See, when something is <u>not</u> familiar to me, that's when I go back and translate it, or I try to make sense out of it from what I know. (pause while reads)

Int: How are you trying to make sense of it?
J: Um... I'm going on to the rest of it and hoping that that will make sense. I'm kind of skipping this right here (points to "claro está que") and looking at that ("no dio resultado"), cos that seems to be just another type of phrase.
Int: (observing) The "claro está que."
J: Yeah. (pause while reads, frowning) I'm not sure how much sense the whole paragraph makes. Can I go on to the questions?

Her flexible use of strategies, abandoning one and trying another, seems to be one of the distinguishing characteristics of the exceptional effectives. Her peer, Sarah, shows many of the same strategy inclinations, including <u>inferring</u> meanings of unfamiliar words and a crucial willingness to revise her inferences, should they later seem incorrect. Sarah, too, shows a greater reliance in Fall 1987 upon grammatical analysis (<u>deduction</u>) when faced with comprehension problems, which would seem to indicate that metalinguistic awareness increases in conjunction with years of L2 study and at some intermediate point of study becomes a useful tool in understanding. She, unlike Jessica, does not skip the unimportant phrase "basándose en esta leyenda" (basing itself upon this legend), but reasons from the fact that "leyenda" is drawn from "leer" (to read): "Leyenda... could be like preterite for... no. Could be present progressive for reading. Yeah, it is. In the reading or something like that..." Sarah, however, shows little inclination in this last interview to stop translating. Her reading of "Jack

the Ripper" is very much tied to English, as is her reading of the cloze passage for that semester.

One point that is very clear in all of the exceptional students' translating, however, parallels what cognitive theory proposes about how readers parse sentences in their native language: that readers tend to "process subpatterns, or phrases, of ... sentences and to combine, or concatenate, these subpatterns. These subpatterns correspond to basic phrases, or units, in a sentence's surface structure" and are referred to as "constituents" (Anderson, 1985, p. 340). As L2 proficiency increased, so did the tendency of these students to process the sentences they were reading by dividing them up into constituent groups. This is illustrated in the examples presented in Exhibit III-4, which traces years of study by starting with the reading (both intact and cloze) of Spanish 1 students and ending with the reading of those in Spanish 5/6. The punctuation mark "..." denotes where the student paused briefly in his or her think aloud; these pauses, sometimes very slight but always noticeable, are interpreted as indications of how the student is parsing the sentence.

Typically, the students divided the sentences into subparts that addressed the subject, then the verb, and then any phrase following the verb. When too many words in the L2 sentence were unknown, however, dividing the sentence up into constituent groups was often, initially, impossible for students; in such cases, understanding the sentence involved translating sections of it word by word, sometimes even having to determine how individual words themselves were parsed, as Theresa does below:

EXHIBIT III-4

Think Aloud Reading Excerpts Showing Parsing by Constituent Groups

Sentences being read:

Sp 1/2: A las siete y media vamos a la __(cocina)__ para desayuno.

Sp 2/1: Mañana la familia de Roberto Herrera va _(de)_ vacaciones a Puerto Rico pero él no va.
Sp 2/2: Pues, en mi casa no permitimos eso.

Sp 3/1: Ocho mujeres de la calle cayeron víctimas al loco demente.
Sp 3/2: Ella _(vive)_ en una casa tan enorme que yo _(podía)_ tener mi propia alcoba.

Sp 4/1: La gente de mala lengua dice que __(nosotros)__ no trabajamos.
Sp 4/2: El sistema es de gran utilidad para los bancos y otros organismos que necesitan trasladar con frecuencia grandes cantidades de dinero o lingotes de metales preciosos.

Sp 5/2: Hay un _(gran)_ animal que se está bebiendo toda el agua _(del)_ estanque y que va a dejarnos secas si _(no)_ lo espantas!

How students read the sentences:

Spanish 1: semester 2 // Jessica (Spring 86, cloze):
A las siete y media, at seven-thirty, vamos a la, we go to the something for a...desayuno, maybe that means breakfast.

Spanish 2: semester 1 // Sarah (Fall 86, cloze):
Tomorrow the family of Robert Herrera...Herrera is a last name? I don't know, is going...las vacaciones...to Puerto Rico, but he's not going.

Spanish 2: semester 2 // Sarah (Spring 87, intact reading):
I don't know what pues is, I have no idea. En mi casa is, like, easy, so I know that much. Hm...no permitimos eso, I know that but I had to think about eso...

Spanish 3: semester 1 // Jessica (Fall 87, reading intact):
Eight ladies of the street...fell victim...loco demente...I'm thinking loco meant - is that one word or two, loco and demente?

Spanish 3: semester 2 // Mary (Spring 86, cloze):
Ella blank con su familia, okay, ella vive con su familia en una casa tan enorme que yo... que... I'm trying to think, um, mi propia alcoba. I'm thinking it must be own room, but I don't know. With the family in her house that's so enormous that I can have...okay, so that makes sense, it's my own room. Um... that I could have my own room.

Spanish 4: semester 1 // Mary (Fall 86, cloze):
The people... okay, the people de la ...mala lengua dice que... the people of bad language...say that, um...okay, that we don't work.

Spanish 4: semester 2 // Carl (Spring 87, intact reading):
Okay, the system is of great utility for banks and other organizations, I guess, that need to transport, or take from one place to another, transladar I don't know, con frecuencia, often, large quantities of money, or precious metals. Whatever lingotes is.

Spanish 5: semester 2 // Ben (Spring 87, cloze):
Hay un something animal que está bebiendo...hm, gran animal? That's what I'll put. Todo el agua, hm, estanque, that's how he started off, so I'm going to go back here, aquel estanque, todo el agua, it has to be one word... I'm going to go on for a little bit. Y que va a dejarnos secas si, eh, si no lo espantas. Okay, so I'm going to go back here and say, un animal que se está bebiendo todo el agua... todo el agua, oh! del estanque.

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Sentence being read: El abuelo dice que está cansado, pero Teresita y yo somos tiranos y al fin le sacamos la promesa de un solo cuento, nada más.

Translation: Grandfather says that he's tired, but Terry and I are tyrants and in the end we get from him the promise of one story only, no more.

T: El abuelo dice que está cansado, pero Teresita y yo somos tíranos... (pause)
Int: What are you thinking?
T: I'm thinking tirános (moves accent mark to middle syllable), what is that? I'm thinking, tyrants? Tyranny... hm... and then... the first thing that occurred to me really was "tira-" and then, like, "nos." Like tíranos, like command or something, throw us.
Int: What changed that idea?
T: Because I saw somos, and I knew right away it couldn't be any command.

After such difficulties, though, the tendency to parse the sentence into constituent groups appears to re-assert itself, with the student concatenating the individual words into larger subgroups and then, finally, concatenating these parts to derive a sense of the sentence's overall meaning. The example presented below, taken from Sarah's intact reading think aloud, illustrates this process.

Sentence being read (from "Jack the Ripper"): Se creía anteriormente que las retinas de los muertos conservaban la "fotografía" de la persona que era vista en el momento de fallecimiento.
Translation: It used to be believed that the retinas of the dead saved the "photo" of the person who was seen at the moment of death.

S: Creía, I'm trying to identify that. But that's creer in the imperfect (in tones of producing a white rabbit from a hat). We just learned that! So it's, um... something thought, like he or she, something, or I. That looks like she, cos... (voice trails off)... Anteriormente, well... it has "-ly" on the end! I know that much! -Ly... Maybe it's ulterior motive or on the outside, I don't know. I don't know that word.

Int: (observing) Retinas (said in Spanish).

S: Oh, retinas! (as in English) Okay. Maybe ... no, that can't be right.

Int: Why?

S: Maybe it could be like the English word, but that doesn't make any sense. I mean, it looks too much like it to me. The English. Of the dead ... um ... conserv- or saved the photograph of the person that ... was ...

Int: What are you thinking?

S: Um ... oh ... that (points to fallecimiento). If it's preterite or if it's a verb at all. Um ... I think it is "that saw in the moment of ... " the killing, or something.

Int: What makes you think (fallecimiento means) killing?

S: Cos ... fall. (Part of the word "fallecimiento")

Obviously working hard to arrive at an overall understanding of this difficult sentence, Sarah addresses it in subgroups (some of them individual words) and considers the meaning of each, then concatenates what she can, as follows: Se creía, anteriormente, retinas, of the dead (de los muertos), saved the photograph of the person, that saw in the moment of, the killing. There is evidence that she moves beyond the boundaries of what would ordinarily be considered the constituent groups, then re-forms the subgroups when she has gained a better idea of what she thinks the sentence is saying (e.g., the phrase "conservaban la fotografía de la persona que era vista en el momento" is initially translated as "saved the photograph of the person that ... was"; then the latter phrase "que era vista en el momento" is separated into its own subgroup, as in "I think it is 'that saw in the moment of ... ' "). Thus, how students divide sentences into subgroups may be significantly slowed down by encountering unknown words whose meaning must be considered before moving on in the sentence, but it appears as if effective students eventually identify the constitutent structure that is

important to the parsing (and understanding) of a sentence. As the example above suggests, students at lower levels of proficiency (due to fewer years of study) may require the medium of English (translation) to identify a sentence's constituent structure. When the sentences are more easily understood, however, as in those presented in Exhibit III-4, the parsing seems to proceed naturally, with the translations falling out in constituent groups; little re-assembling is needed. As for the advanced EEs, translation hardly seems a part of their parsing; of all the students involved in this project, the EEs at the advanced level read in the most fluent and native-like manner.

In comparing the strategies these advanced students used for intact reading with those used for cloze (see Exhibit III-2), it is clear that they found the cloze reading more demanding. Each completed the intact passage ("Jack the Ripper") swiftly and easily, claiming not to translate but, rather, inferencing the meaning of unfamiliar words (i.e., Theresa: "Fallecimiento, now I don't know what that means exactly, because I've never seen it before, but I'm going to assume that it means the happening, the event of the person's being killed"). The same non-translating but inferencing approach was evident in these students' cloze work, but the presence of the blanks to be filled in appeared to force them to process what they were reading with greater attention to its surface structure (deduction), as in the following example:

Sentence (from cloze, "La Rana y El Buey"): __(All)__ se hallaban contentas, aunque pobres, y pasaban la __(vida)__ cantando y divirtiéndose.

Translation: _(There)_ they were happy, although poor, and spent their _(lives)_ singing and frolicking.

Ben: ... se hallaban contentas, I guess the subject, ellos (writes this in). Ellos se hallaban contentas, aunque pobres, y pasaban la día, no, it can't be la día. Pasaban la noche, because día is masculine. (Writes in noche)

Both of Ben's cloze answers to this sentence (ellos and noche) are grammatically and semantically acceptable, although they are not the words originally written into the story. It is noteworthy that English does not appear to serve as a reference point for his decision-making about these two blanks nor throughout the rest of the cloze passage, any more than it serves as reference point in his intact reading. Apparently, he is not interested in literal meaning when a broader, less precise understanding is possible. This approach is assumed by the other advanced level EEs as well. In fact, there seem to be few differences between the overall "intact reading" approach taken by those advanced level EEs who had travelled in Latin America and those who had not. This is likely due to the fact that they all understood this intact reading selection easily. What differences exist seem largely a function of individuality (e.g., Ben was the only advanced level EE to use summarizing while Theresa was the only one to use deduction and was also the heaviest user of elaboration; Kathy paused over pronunciation (self-monitoring of production) but not comprehension).

One large difference in how the advanced level EEs, as a group, proceeded through the two types of reading relates to elaboration, which they used far less in intact reading than in cloze. This difference is probably due to the greater difficulty and length of the cloze, as well as the fact that they had to generate words for the blanks, rather than just "receive" and generally understand the language (the influence of the blanks on Ben's reading behavior is evident in the think aloud excerpt at the bottom of Exhibit III-3). Their processing of these two passages, and the difference in the number and range of strategies they used in each, reinforces findings (Chamot et al., 1988)

that the difficulty of the task, and the nature of the task, have a serious impact upon strategy selection - and even the necessity of using strategies. That the two lower level EEs (Sarah and Jessica) together used a total of 225 strategies (or an average of 112.5 apiece) to read "Jack the Ripper", while the advanced level EEs averaged 18.5 strategies for the same passage, indicates the "needs must" nature of using strategies. What the latter, as Spanish 5/6 students, were able to read fluently, the former (as Spanish 3 students) had to struggle mightily over, using a wide range of strategies to assist them but still emerging with a limited understanding of the passage. In Krashen's (1982) terms regarding comprehensible input, the "Jack the Ripper" selection was at the "i" level for Ben, Eve, Theresa, and Kathy, but at the "i+2" level for Sarah and Jessica, and this difference resulted in enormous differences in strategy use. Self-monitoring, inferencing, and elaboration appear to have been most useful to both sets of students in reading "Jack the Ripper."

Summary: Effective Reading in a Foreign Language

The major research question asked at the beginning of this section was: What strategies and/or approaches contribute maximally to reading comprehension in a foreign langauge? The preceding pages have presented longitudinal findings of how 8 exceptionally effective students read in Spanish. The data appear to support current theories of reading as a complex cognitive skill that requires the student to interact with the text in order to generate, rather than passively receive, meaning. In the beginning levels of L2 study, students process both cloze and non-cloze reading passages through the medium of their native language (translation), but this reliance upon L1 can be seen to diminish at the advanced level. There, reading can be

done in a much more native-like manner. Other strategies that appear to be highly useful are, by level of study and type of reading (cloze and intact):

Level of Study	Both Types of Reading	Cloze Reading	Intact Reading
Beginning	Self-monitor Elaboration Inferencing		
Intermediate	Self-monitor Elaboration	Deduction	Inferencing Summarizing
Advanced	Self-monitor Elaboration Inferencing	Self-evaluation Deduction Summarizing	

Clearly, self-monitoring and elaboration are critical strategies for students at all levels, a finding in keeping with research on effective native language reading behaviors (Gagné, 1985; Garner, 1987). Effective use of these two strategies can best be illustrated by examples such as the ones presented below, with the emphatic note made that the type of monitoring most important to reading is the monitoring of comprehension ("Does this make sense?"), not the monitoring of production that Krashen (1982) discusses.

Example 1: (Jessica, Spring 87, Intact Reading)
Sentences being read: La señora limpia la casa por sí sola. Y los niños trabajan.
Translation: The lady cleans the house by herself. And the children work.

J: She cleans the house by herself and los niños, I believe that's children. To tell you the truth, I'm not really sure. (pause)

Int: What are you thinking?

J: Oh! I was thinking about what we'd learned, the words, actually in class, because there are a few given in the book, just family members. She gave us more, niños was one of them, that's what she gave us on the board. I remember that much but I can't remember if it means children. For some reason it struck me as meaning grandchildren, but that doesn't make sense because I know that she (la señora in the reading passage) is only 36 years old. I just figured it has to be children.

Example 2:
(Jessica, answering the questions on "Jack the Ripper" passage, Fall 87, Intact Reading)

J: (pause while reads the second question) Okay, now I see this question #2, and I realize that the second paragraph was probably all about the description of the superstitution. I didn't pick up on that, even though I'd read at the beginning... I didn't get the transition from one to the other. Now I'm kind of going back. (Re-reads second paragraph)

The top example shows that self-monitoring may become necessary due to the student's limited language repertoire. This is not a phenomenon purely of second language study (people reading in their native language also encounter words whose meaning they are unsure of), but vocabulary problems are far more likely to happen when reading in a foreign language. This example also illustrates that when effective students self-monitor in L2 reading, they generally do not use the strategy alone. Not understanding the language itself, or fearing that one has reached an erroneous conclusion about the language, can only be put right if some further action is taken. In the top example, Jessica, at the time a Spanish 2 student, finds herself uncertain as to the meaning of niños (self-monitoring), although she can recall where and how the word was introduced to her (academic elaboration). She resolves the situation by recalling information presented earlier in the passage (that the lady was only 36 years old, an elaboration between parts), then using it to reach the conclusion (inference) that, given the context, niños is more likely to mean children than grandchildren. Thus, elaboration and inferencing are important "fix-up" tools.

The second example represents a self-monitoring that is more closely tied to the message of the reading passage than to the meaning of an individual

word, and, as such, identifies a more critical problem in comprehension. Jessica's awareness of the problem, and her pinpointing of what probably caused it (her failure to connect ideas across the break in paragraphs) exemplifies two of the most salient characteristics of these effective students as they read: the knowledge that reading comprehension requires integration of the ideas expressed in the passage and that the building of meaning is an on-going process, subject to revision at any time. Each one of these 8 effective students consistently manifested the ability and willingness to draw conclusions as they read, and to doubt, verify or modify those conclusions if a new piece of information cast the old in a different light.

One of the sub-questions asked at the beginning of the section was whether (and if so, how) reading a cloze passage differed from reading an intact one. Small differences were found to exist in how these effective students read these two passage types, and appear to result from individual variations in approach as well as from differences in the tasks themselves. Individual variation in approach was evident, for example, in how Sarah (a beginning level student) read. She seemed more likely to breeze through the intact reading and not concern herself with what she did not know. She began the cloze passages in the same irreverent way but soon found herself enmeshed in trying to figure out the blanks, concentrating more and more as she went. For her, cloze seemed a more productive activity, for it forced her attention to stay on the task, while intact reading, in requiring no specific product from her, allowed more space for laziness or carelessness. Other students, in contrast, appeared to benefit more from intact reading, in that they were able to read in a more fluent manner and did not become so frustrated by what they did not know or the necessity to fill in a blank. This latter

relates to the differences in the two reading tasks. Cloze reading requires students to generate language as well as receive it, and so forces them to attend more closely to grammatical details of the text. This appeared to result in greater use of metalinguistic reasoning or deduction as students analyzed cloze sentences to determine what part of speech the missing word might be (e.g., preposition or verb). While this may sharpen their use of rules and their awareness of language forms, it also diverts their attention from text meaning and focuses it instead upon the means of expression.

Another qualitative difference in strategy use for these two types of reading was in the use of translation. Although it was certainly used in both types of reading, all but the most advanced students felt they were more likely to translate in an activity such the cloze because filling in the blanks required a more precise understanding. Translating to English helped them to determine what word was needed for the blank. In contrast, students appeared more likely to ignore or guess at unfamiliar words (inferencing) when they were reading an intact passage. Here, translation seemed more a function of the difficulty of the reading: all students read swiftly those phrases or sentences that were highly familiar, and slowed down when the text was unfamiliar, often moving word by word and translating as they went.

In both intact and cloze reading, though, the general pace assumed by students was the same: they processed sentences in a manner described by cognitive theorists (in hypotheses of pattern-recognizing production systems), namely, that readers proceed by "dividing a sentence up into constituents, identifying the character of each constituent, and applying a semantic interpretation to each constituent", relying upon the fact that "sentences

contain various clues (word order; key words, such as who; inflections) that allow the constituents to be identified" (Anderson, 1985, p. 341). Deviations from this general pace appear the result of automaticity (where reading is so fluent that constituent grouping is no longer apparent, as in Ben, who says, "I don't think I group things. I just read it") and of difficulties encountered, where students are forced to adjust their reading rate to move word by word.

In summary, examining how these students read in Spanish gives the unmistakeable impression that, for them, the process mirrors closely how they read in their own language. They suffer the constraints of inadequate L2 vocabulary and, as a result, tasks may be too difficult for them, but they proceed in a fashion characteristic of native language reading (e.g., by constituent groups), and deploy strategies that are characteristic of good readers in general: the tracking of understanding (translation, summarizing, self-evaluation), awareness of comprehension breakdowns (self-monitoring), and the willingness and ability to remediate, or "fix up", when necessary. Their principal fix up strategies are: inferencing, elaboration (particularly between parts of the passage and to world knowledge), and deduction.

CHAPTER IV

Additional Findings of the Longitudinal Study: Listening to Spanish

Introduction

The Longitudinal Study, in each of its four semesters, asked students to listen to a passage that was periodically interrupted by the sound of a soft bell; at this point, the students were asked to say aloud the thoughts that had occurred to them while they listened and to describe, generally, how they went about listening. The data that resulted were not as rich and detailed as the reading and writing data, because students could not listen and report their thoughts simultaneously. However, the gap of time between hearing the passage and reporting thoughts was very small, so that students were able to give clear accounts of how they had listened and understood - or misunderstood. This section of the report, then, will review prior longitudinal study findings regarding strategies used for listening to the L2, and present analyses of how the exceptional effectives approached the task of listening to Spanish.

Review of Prior Longitudinal Study Findings

In Chamot et al. (1988), preliminary findings were reported regarding the strategies that effective and ineffective students of Spanish use when listening. Some of these were:

(a) When the listening material is too difficult, the use of strategies is unhelpful or impossible. Conversely, when the material is too easy, use of strategies is unnecessary.

(b) Data on strategy use were reported for those students at the intermediate level only. Effective students at this level reported greater use of the strategies of: selective attention, self-evaluation, note-taking, and elaboration.

(c) Providing students with questions about the listening passage, prior to actual listening, can spur use of the strategy combination of selective attention and note-taking. The presence of the questions also helps students to prepare for what they are going to hear (inferencing - predicting).

(d) There was little difference between how many times effective versus ineffective students used critical strategies such as inferencing and self-monitoring. However, there were qualitative differences in how the two groups used these strategies, with the effective students using the strategies with greater persistence and purpose.

The Listening Tasks

Preparing listening passages that would hit just above the the students' current level of listening proficiency was quite problemmatic. For example, the passage given to beginning level students in the first think aloud interview (Spring 86) was too difficult, although the material was very basic, while that given to advanced level students proved far too easy. [Listening think aloud protocols for these two groups of students were not analyzed nor reported upon in Chamot et al. (1988)]. In subsequent semesters, the passages that were prepared were more appropriate in difficulty for the proficiency of the students involved, but problems still persisted at the beginning and advanced levels: most beginning level students could not understand the passages, and all of the advanced level students understood fairly easily. For these latter, passages emphasizing academic or scientific content were prepared, both to challenge their listening skills and to see if students would make use of academic and world knowledge gained through the medium of L1.

For the purposes of this report, then, selected listening activities have been examined to address the above question and to see what strategies and overall approach seem to aid (or detract from) students' listening

comprehension. These passages are listed and summarized in Exhibit IV-1. [It should be noted that the pauses inserted into the text for the student to think aloud always fell at natural discourse boundaries, such as at the end of a paragraph or a conversational exchange.]

The Exceptionally Effective Student, and Listening in Spanish

Regardless of level, these very good students showed an amazingly similar approach to listening in Spanish. As a pattern, they:

- stayed focused on listening
- knew when their attention wandered
- could identify the gaps in their understanding

- did not worry over words they did not know, unless they thought the words were key
- used all available clues to guess at meanings of key words, including information already presented in the passage, information that came up next, and facts that they already knew
- were willing to settle for an approximate meaning of a word, when a more precise understanding was not possible

- made predictions about what they would hear
- recognized when their predictions were and were not borne out, and
- revised their overall understanding of the passage, if necessary.

These listening techniques are very similar to those used by these students while reading (discussed above). EEs at all levels also:

- used the questions to prepare themselves for listening
- selectively listened for words that related to the questions

- were aware of the structure of the passage being heard (e.g., the introduction versus conclusion)
- judged the interest level of the passage, and
- related what they were hearing to what they already knew.

These overall listening techniques correspond most prominently to the strategies of: elaboration, self-monitoring, and inferencing, with the importance of staying focused upon listening - and knowing what to focus upon - showing up as directed and selective attention. Each of these will be

EXHIBIT IV-1
Summary of Listening Tasks
For Which Student Think Aloud Protocols Were Analyzed

Semester	Level	Title of Passage	Content of Passage
Spring 86	3	Un minero boliviano[a]	A male talks about his life in the mountains of Bolivia. He is a miner, works all day, & goes to school at night. Monologue, 4 pauses.
Fall 86	2	La Bienvenida[b]	A new family moves into the neighborhood. Nosy neighbor Amelia comes to question the new lady, asking such amazingly personal things that the lady thinks she's from the government. Dialogue, 5 pauses.
	4	Cortesías[c]	Greeting courtesies in Spanish-speaking countries are discussed. Lecture, 7 pauses.
	6	El Carbón[d]	Facts about prehistoric and modern man's use of fuel are presented, with a concentration on how coal is formed and then used by man. Lecture, 7 pauses.
Spring 87	2	El gato que nunca muere[e]	A woman describes her family's adored cat, Sancho. Monologue, 8 pauses.
	4	Prohibido fumar en el tranvía[f]	A woman tells the story of an old man who rides the streetcar with a pipe in his mouth, when it is forbidden to smoke in the car. Narrative story, 6 pauses.
	6	Vida en Marte[g]	A woman describes the Viking II's journey to Mars and the data it sent back to Earth about the red planet's surface & atmosphere, & possible existence of life there. Lecture, 5 pauses.
Fall 87	3	Un minero boliviano[a]	See description under Spring 86.

[a-g] A list of sources for these listening passages is provided in Appendix B .

Note: The listening activity in the Spring 86 think aloud protocols of Spanish 1 and Spanish 5 students was not analyzed due to the fact that the listening passages were too difficult and too easy for these groups, respectively.

This illustrates that attention may be multi-leveled; for proficient listeners, it is possible to listen superficially, hearing the words and understanding them but not really thinking about the message until there is a reason to. This latter seems to correspond to the utilization stage of comprehension, where the listener decides what to do with the message being received. One reason to perk up attention and allow more thought to become engaged with the passage is, obviously, interest in what is being said. Eve responded to the part of the lecture she found interesting in a manner totally different from the one shown above.

...I thought it was neat that she said that when we burn carbón, or leña, I forget what it was, that it comes from the sun whenever, however many million years ago, and that was interesting, and then I thought of, just like, a plane, a horizontal plane and then a diagonal something from the sun to Earth, you know, the planet Earth.

Another incentive to focus attention more closely, apparent in all of the effectives, was the presentation of information deemed important to the global message of the passage. Students used the questions presented in their workbooks to determine what the central concepts were (or at least what type of information they were expected to glean - again, a utilization issue) and perked up their ears when they heard key words. Theresa, for example, as a Spanish 6 student, listened for such key words as "importancia ... essentially the things that you would probably focus in on if you were having an English lecture as well, you know, importance, development..." (Fall 1986). This use of <u>selective attention</u> was reported in

discussed more fully below, with examples given of how these exceptional students used the strategies to their advantage. Of particular interest is how these strategies are used in the stages of listening comprehension postulated by cognitive psychology, as described by Anderson (1985) below:

> Comprehension can be analyzed into three stages: perception, parsing, and utilization. Perception concerns translation from sound to a word representation. Parsing is the process by which the words in the message are transformed into a mental representation of the combined meaning of the words. The third stage is the utilization stage, in which comprehenders actually use the mental representation of the sentence's meaning. (Anderson, 1985, pp. 335-337)

Perception. The stage of perception in listening, according to cognitive theory, involves primarily the ears (to receive the acoustic message) and the will to focus attention on listening. Of interest in this study is the latter and the EEs' ample demonstration of their attentional capacity. Regardless of how interesting or boring they found the listening topic, as a rule the EEs listened hard and stayed focused (directed attention); as Carl remarked about daydreaming: "Not when I'm doing something like this." Only Eve appeared to let her mind wander off the task, but she did so in each semester's listening activity and still managed to keep half an ear on the passage.

Fall 1986, listening to "El Carbón":

E: Um . . . well, I thought of people going down underneath to get coal. (pause) And my eyes wandered around the room. I looked at the health book over there and saw the orange color and . . . that's all.

Int: She's speaking too slowly?

E: I guess. Also, I mean . . . before, when she said about the light of the sun and stuff, I thought that was interesting, it was something I didn't know. . . . I listened to that because it was something I didn't know and it sounded interesting, but the rest of the stuff seems . . . um, like, it's nothing new, so I'm not paying attention that much.

Chamot et al. (1988) and often appeared in conjunction with note-taking. Although use of note-taking was found to drop off as students became advanced in their study, selective attention remained an integral part of how they listened in each semester's interview. Certain qualitative changes were evident, however, in how effectively beginning level students were able to use this strategy as they advanced in their language study. Jessica, as a Spanish 1 student, was one of the only students to prepare herself for the listening activity by thinking of key words in Spanish that the passage was likely to contain, but this did not help her to understand the passage because it was too difficult.

(Before listening, after reading the questions): I'm thinking of the weekend in Spanish and the center of town, how you say that in Spanish. ... I'm going to listen for, there's a few verbs here that I can listen for, ir and invitar, and something about when I hear María Teresa's name, and then I'll know what they're talking about, and I can listen to them seeing her, you know, that verb...

(After listening): I did not understand that. You see, I don't know who was talking, they didn't really say their names, and they saw María Teresa and I heard un poco and that's about all I undestood. Something about a little bit.

Similarly, Sarah used the questions in the workbook to focus her listening in each semester's interview, but only in the last semester (Fall 87), as a Spanish 3 student, did she actually adopt Jessica's approach and convert the questions in English into key words in Spanish, for which she then specifically - and successfully - listened.

S: I understood all of that in Spanish. I didn't have to translate any of that.

Int: What did your mind do?

S: Like, before it started, I read the question, I, like, I put the words into Spanish in my mind, like escuela and durante el día, stuff like that. I mean, I just translated it into Spanish in my mind, to key myself for those words.

Int: And they came?

S: Um-hm.

Thinking of Spanish words that might be heard in the listening passage represented, for Sarah, a qualitative change in how she prepared to listen for the text that would soon be rushing at her. Thus, across the semesters of the study, improvements were noted both in beginning level students' listening technique and in their listening performance. As beginners, though, even with the questions available to guide their perception, it was difficult for them to stay focused in even a general way upon the listening (directed attention) if the text became too difficult. After a certain amount of the passage had gone by and not been understood, even the most effective beginning level student lost heart, stopped listening, and simply waited for the task to be over, a reaction not unlike that of the ineffective students. "If I miss one part of it," says Sarah, in Spanish 2, "I'm probably gone. Forget it."

The upper level students tended to take an alternative approach when sections of a passage were missed: they shrugged off the difficulty and focused on understanding the next section. This approach is expressed best by Carl who understood the Spring 87 passage for his level so easily that he was asked to listen to "Vida en Marte", the lecture prepared for the Spanish 6 students. "What I know, I know,' he says. "If it's an important word ... and I miss it, I have to ignore it. And just go on and not worry about it, and get the next sentence." He also identified when the sections of a

listening passage could be understood separately from each other without serious disruption to an integrated understanding of the text. "I pick up what I can," he said of the difficult Spanish 6 passage about Mars. "There was a section I didn't understand, so what? It's not like the next passage depends on the passage before." In recognizing that each section of the passage was presenting a new set of ideas about Mars, he avoided becoming frustrated by what he did not understand (the chief reaction of beginning students) and was able to meet each section with renewed concentration.

Thus, the ability to keep attention on the listening task (directed attention) is clearly a pivotal first step in the listening process. A refinement of this basic attentional capacity is the ability to selectively attend to words, phrases, or ideas identified as important. Among these EEs, this latter ability appears to increase as L2 proficiency increases and, presumably, the students get more practice in listening. The example above drawn from Sarah as an intermediate level student is, in fact, typical of the approach taken by those EEs operating at the intermediate or advanced levels of study: prediction of what will be heard, based upon the questions in the workbook, was instrumental in their selective attention process.

Carl (in Spanish 4/1, Fall 1986, after reading questions, but before listening to "Cortesías" - Courtesies):
Greetings comes to mind ... hola, I don't know, there's formal versus information. And whatever the phone thing is, that's diga, cos we talked about that, and that's what I would expect to hear.

Ben (in Spanish 5/1, Fall 1986, while reading questions, but before listening to "El Carbón" - Coal):
(reads #2 and its options) I'm going to just listen to the tape to find out that. I assume it's water but ... (reads #3 and options) I know that one already, so I'll choose A for that. (reads #4 and options) I'm not sure so I'll just wait and listen to that as well. All right, I'm ready to go.

These two examples serve to illustrate that predicting what might be heard (a form of inferencing) leads naturally to the decision to selectively attend according to those predictions, and that the combination of these strategies might be expected to facilitate significantly not only the perceptual stage of listening comprehension, but the parsing stage (or the search for meaning) as well - which appears to be the case with these effective students. Cognitive theory allows for such overlap in the stages of comprehension, although they are "by necessity partially ordered in time" (Anderson, 1985, p. 337).

Parsing. What strategies are most useful in the parsing stage of listening comprehension? According to Anderson (1985), "Language is structured according to a set of rules that tells us how to go from a particular string of words to an interpretation of that string's meaning" (p. 337). The presence of this set of rules implies that use of syntactic cues, or deduction, would be helpful in parsing, and this was indeed the case in reading, as was seen in the last section. The student think alouds show, however, that deduction is less useful in parsing while listening than while reading because "looking back" over the listening text is not possible, nor is lengthy grammatical analysis. Because listening is faster paced than reading, students appear to rely heavily upon semantic patterns in order to parse and understand. Elaboration, inferencing, and self-monitoring are the tools they use.

Theresa, after listening to the section in "El Carbón" (Coal) that discussed prehistoric man's use of wood as fuel:

Essentially what I picked up is pre ... prehistórico, which I know means some prehistoric man and such like. The only word that I really didn't know there was leña, and I'd seen it over here in the vocabulary list. And I assumed from the dialogue that they were talking about combustible (in Spanish), that means fire, so therefore the only ... from prior knowledge I know that, um ... combustible in prehistoric times would have been wood. Essentially, so leña is a stick of wood.

Because foreign language students constantly encounter unknown words while listening, they must be able to work around what they have not understood in order to construct meaning. In the example above, Theresa knows she must determine the meaning of leña, a key word in the sentence and a key concept in the paragraph; to do so, she uses her knowledge of fuels of prehistoric man (academic elaboration) to correctly infer that leña means wood. In the example below, Mary transfers from English to Spanish to infer the meaning of "espiral" (spiral), then uses knowledge of the world (world elaboration) to construct what the last phrase in the paragraph means. Almost incidental to this process is the fact that she has not heard the words correctly at all ("el humo" she hears as "la fuma"); based on her world knowledge of smoke and the transfer (for "espiral"), she nevertheless arrives at the correct meaning of the phrase.

Sentence of confusion: "No insisto en fumar," dice el viejo, que todavía tiene en la boca la famosa pipa, de la cual sube el humo en espiral.

Translation: "I'm not insisting on smoking," says the old man, who still has in his mouth the famous pipe, from which smoke is rising in a spiral.

Mary: I didn't get the end of that, I don't know. Hm ... he said, well, okay, but you have to smoke in the back of the train, and he said, I didn't say I was going to keep sm- ... the last line again, he said something about his pipe and the smoke ...

Int: Do you want to hear it again, or go on?

M: Yeah. (this section of story played again) Oh, see, that was again the conversation. I thought he was continuing to say something, and that was just saying that the smoke continued to spiral up. Okay.

Int: How did you figure that out?

M: After the comma, the last part there, de la cual ...

Int: (reading from the story) ... sube el humo en espiral ...

M: Right, that's what I didn't catch last time, but, hm ... the espiral, that's from the English, spiral. La fuma, what does smoke but it goes up?

In the two examples presented above, students relied upon academic and world elaborations to help themselves grasp meaning. Another type of elaboration that students might be expected to use is between the parts of the passage, much like that used during reading. While students certainly related the parts of the passages to each other, they used this form of elaboration less frequently than the other forms, but in a similar way to its use during reading, namely, with self-monitoring, or as a means of clarifying something that was not well understood.

Carl, Spring 87 listening, "Prohibido Fumar en el Tranvía":

(After hearing part 2): Again, I knew most of the words. I got a little off of who was talking. I don't know who was saying the stuff at the end. It's the sort of thing that gets screwed up in English, so sometimes you don't remember the order of conversation.

(After hearing part 3): I understood and that cleared up the other part ... like, who was talking. I wasn't sure if it was the old man who had seen the sign, or the guy, the cobrador. So now I know it's the old man.

Clearly, there are aspects of problem identification and selective attention in Carl's listening approach: Identifying the piece of information he missed in one section sets him up to listen for clarification in the next section. But using information presented in one part of the passage to correct something not understood in another part (elaboration between parts and self-monitoring) did not always occur as a result of selective attention; often the student appeared to simply note that the missing information had been given, as below.

Theresa, Spring 87, after listening to the second part of "Vida en Marte":

Okay, hmm, first, the thing that I didn't understand most in the first one was, I believe it was the name of a satellite, or some sort of picture taking device. I didn't understand that. I assumed that that's what it was, but I didn't really know what it was until she said it started taking -- it had cameras, and then I knew it was some sort of satellite.

The intermediate and advanced level EEs were more likely than the beginning level students to operate in this manner - retaining unanswered questions in the mind and either seeking the solution across the entire listening passage or being aware when the solution was presented; this strategy difference by level is probably because for beginners, the task of trying to listening to and understand one section was task enough; they had little cognitive space left over for the double check form of self-monitoring that, for example, Eve is using when she says "And turba, I still haven't figured out" or, in a fuller, more sophisticated application, the self-monitoring evident in the think aloud presented below, drawn from Ben's interview regarding the meaning of the same word, turba (spongy moss):

(before listening, looking up turba in the dictionary incorrectly, thus unknowingly assigning it the wrong meaning):

B: Turba. Where the - (mumbles, finds word, writes down "crowd")
Int: Crowd?
B: Crowd. Turba, yeah.

(While listening to section of passage where "turba" is used, he turns in his workbook from the question page back to the page with the introduction & the vocabulary list)

B: All right. The word I got for turba doesn't match with that. So I assume turba is this sludgy stuff in the swamps that ... ends up, um ... causing ... (slight pause) ... or sediment, I'll bet it's sediment.

He goes on to explain how he realized that "turba" did not mean "crowd", a think aloud that illustrates that the process of discovering meaning in an L2 listening text often involves using a sequence of learner strategies. The coding Ben's think aloud received is written along the side; note that, in moving from a word representation of the passage to a representation of its meaning, he uses all three types of strategies: metacognitive (self-monitoring), cognitive (resourcing, summarizing, inferencing, and academic elaboration), and social/affective (questions to the self).

B: ... she came to a word that I didn't know, I just checked back to see if it was on the list and it was.

Int: Which one was it?

B: Um ... the helecho came, and I said, what's that? Fern, that's right, and the force of ferns, and how they collect the sunlight, and then they're gonna fall down into the water and this will decompose into this substance that they call turba. And that ... that just hit me at the last moment, and I said, crowds? It couldn't be, so ... I figured it's ... it's probably sediment.

Int: Where did you get the idea of sediment from?

B: Um ... because I basic- I know ... what coal came from.

Generally speaking, as these EE students advanced in their study of Spanish, they appeared to find ambiguity less of a handicap in their parsing than in the beginning years. This seems clearly the result of experience in L2 listening (where unknown words and unclear meaning are encountered constantly) and a difference in the size of language chunks used in concatenation of meaning. In the previous section of this report, these students' tendency to proceed forward in their reading in constituent groups (phrases) was discussed, and the same tendency would be expected in listening work, given that it is a language comprehension (rather than

generation) process. This appears to be partially the case, although the ease of this process varied widely as a function of level of study and difficulty of text. Beginning level students, finding listening quite difficult and with little practice at it and a limited L2 repertoire, appeared to concatenate meaning often by combining single words or highly familiar phrases (e.g., "¿Cómo estás?", "How are you?") and then guessing at the message being communicated. The difficulty of listening without the requisite vocabulary and building meaning is illustrated below.

Jessica (Fall 1986, listening to "La Bienvenida"):

Something about meals, she said, "Well, therefore . . . " and maybe it's "Do you have a maid?" or something. And then "therefore", you know, "do you . . . " I don't know limpia either, but it's something about the meals, and them she said, "Therefore, do you cook yourself?", I don't know. Something about maybe cooking herself, you know, cos I heard "comidas" at the end and I recognized it. (Int: How did you get the idea that criada meant maid?) Probably cos just the tone of the conversation. Do you have so and so? No, I don't have so and so, and then therefore . . . "therefore" kind of signals that, you know. (Int: The opposite thought?) Right, the opposite thought, and then I heard comidas and maybe "do you cook?"

Jessica, not knowing either "criada" (maid) or "limpia" (cleans), makes use of the marker "therefore" in combination with what Ellis (1986) refers to as extralingual inferencing (the tone of the conversation and the sequence of exchanges) to hypothesize what the two ladies in "La Bienvenida" are saying to one another. "By observing the non-linguistic correlates of utterances,

the learner can convert input that is beyond his competence into intake", using "meaning as a clue to language, rather than language as a clue to meaning" (Ellis, 1986, p. 173).

With greater proficiency, and with a text that is more easily understood, students appear to absorb meaning in groups of words, or - when the text is very easy, in whole sentences. Some of their remarks about this process are presented in Exhibit IV-2. The remarks of Kathy and Eve highlight that listening comprehension is multi-staged, as proposed by Anderson, namely, that it is a process of hearing, or perceiving ("I hear it word by word . . . ") and then determining meaning, or parsing (" . . . but I think I get the meaning in groups of words"), with Carl's remark addressing the stage of utilization ("I'm not really learning. I'm just . . . understanding what the lecture is"). Ben's statement that "I couldn't go back and repeat what words she used" eludes to what Anderson (1985) calls "another feature of the parsing process", namely that when the meaning of a constituent group has been determined, "the exact words in the constituent are no longer needed" (p. 342).

Utilization. The utilization stage of listening comprehension involves what the listener does with the meaning he or she has assigned to the text listened to. Carl's remark in Exhibit IV-2, where he differentiates learning from understanding, illuminates one important limitation of the think aloud interviews: while they engage the students in typical classroom activities such as reading or writing a story in L2 or listening to a dialogue, they can not replicate the environment of the classroom, where a student is expected to remember material (which is usually recycled across numerous lessons) and to demonstrate L2 competence on a test and beyond. Students were not

EXHIBIT IV-2
Think Aloud Listening Excerpts
Where Students Describe How They Listen

During the listening activities, students were asked: "How do you think you listen, word by word, in groups of words, to the entire sentence, or some other way?" Below are some of their responses.

Ben, as a Spanish 3/2, Spring 86, listening to "Un minero boliviano":

- Sentences. I mean, if I didn't understand it as well, I'd just listen for the main words, but I can understand the whole thing.

Mary, as a Spanish 4/1, Fall 86, listening to "Cortesías":

- Um...I think I was kind of going...like in phrases, um... I don't know, some words stood out. It's like a word that jumps out, and then because of one word, you can guess the meaning of the rest. A cue word.

Carl, as a Spanish 4/1, Fall 86, listening to "Cortesías":

- Oh, it's the sentence, I guess. And the lecture is easy because...um, it's long, but I can't understand, and...and there's not these big, long, involved sentences. She's talking about simple enough (things) that I'm not... what they're telling me isn't really... I'm not really learning. I'm just...understanding what the lecture is.

Mary, as a Spanish 4/2, Spring 87, listening to "Prohibido Fumar en el Tranvía):

- And it's slow too, so you can go word by word, you don't, you know, more than phrases, it's more word by word. (Because she's reading so slowly?) Yeah, you can think about each word. If it's really fast, just one word will jump out and then you have to kind of pick the phrase up from that. But because it's so slow, it's clear.

Ben, as a Spanish 5/1, Fall 86, listening to "El Carbon":

- I just listen to the whole sentence. I couldn't go back and repeat what words she used.

Kathy, as a Spanish 6/1, Fall 86, listening to "El Carbon":

- I think I hear it word by word, but...I think I get the meaning in groups of words. Cos sometimes I rely on the other words that go with it, so I don't think...I think I just take it all as a group, but I listen to every word.

Eva, as a Spanish 6/1, Fall 86, listening to "El Carbon":

- Well, I think cos she was speaking a little slowly, I might have listened word by word, but I don't think so, cos then I really wouldn't be able to understand it. (laughs a little) I mean, you have to listen in groups.

Therese, as Spanish 6/1, Fall 86, listening to "El Carbon":

- It depends. If the voice is fast, I can only pick up one word at a time, and that's what I use to try to figure out what's going on. But in a tape like this, which is going fairly slow for what I'm used to, um... I usually just pick up a...whole sentence.

---

asked in the think alouds to demonstrate their L2 competence; rather, they were asked to say aloud what they thought while working with the L2, which reveals process. Thus, the students were not expressly given a motivation or reason to concern themselves with utilization beyond the moment of the interview. This results in less data addressing utilization issues in listening, particularly how students would go about recalling the information they had heard after some time had passed, but data are available in these think alouds to indicate that students do compare new information to what is already in memory, with the result of augmenting, refining, reorganizing, or restructuring what is known about (a) the information presented in the think alouds through the medium of the L2 and, to a lesser degree, (b) the L2 itself.

The primary utilization incentive in the listening activities was that students were expected to answer questions about the listening passage. But utilization of information, ideally, should go beyond the immediacy of questions to be addressed, if long-term learning is to take place, and so these EE students might be expected to access in their memory clusters of information relevant to the information being presented. Cognitive theory proposes that meaning is recorded in human memory according to propositional networks that, in combination, are hierarchically organized into sets that "hold" what we know about certain things, such as how houses are build or how coal is formed or how we order a meal in a restaurant. These sets are referred to as schemata (Gagné, 1985; Anderson, 1985) which are accessed in memory in a sequence of "spreading activation" that first calls up the information most strongly associated with the issue at hand and then spreads to other associated ideas or concepts. Students, then, in receiving

new information, could be expected to access a schema that is relevant to what they are hearing; utilization would involve comparing the contents of the schema to the new information and either integrating the new with the old, or shifting or restructuring the old to accomodate the new. Students were seen to do this, beginning the process prior to even listening.

Theresa, before listening, while she reads the questions for "Prohibido Fumar en el Tranvía", Spring 86:

Where does the old man sit in the streetcar? Why does the conductor approach him? What does the conductor want? What is the passenger's reaction to the conductor's request?

Okay, where does the old man sit in the streetcar, I'm thinking, we're on a streetcar, and I'm seeing conductor here and saying, okay, this is the set, a streetcar.

Here, Theresa is preparing a set in her mind for the story's action. Eve reacts in a similar fashion to the same questions, adding "So I think of a San Francisco trolley", alluding to a "streetcar" schema. Clearly, although accessing relevant schemata prior to listening may be motivated by utilization concerns, it has advantages for the processes of perception and parsing (as has been discussed in previous sections), for now these students have a mind set for what they will hear and can interpret incoming information through the contents of the schema.

With the passage "Vida en Marte" (Life on Mars) it was possible to see students shift from one schema to another when what they were hearing did not match their expectations. The Spanish 6 workbook contained a typographical error in the title so that it read "Vida en Martes" (Life on Tuesday). Once the lecture had begun, each EE realized that they were

operating on the wrong schema, a process of self-monitoring that the example from Theresa sums up below:

> Okay, first thing was Martes, I did not know was a planet. Hm ... I was thinking it was a day of the week. I was, like, wait a minute, what does this have to do with the day of the week? But now I know, planet, and I'm not sure, I'm assuming it's Mars. But, hm, I've never heard the term Martes applied to Mars.
>
> So, hm, that's really the only thing that struck me. It kind of struck me, because, you know, I said, wait a minute, this is a whole different mind set now. So it kind of struck me, and I didn't understand all of the lecture. I think that has something to do with it, the fact that I did get stuck ...

Once listening had begun, the strategies that appeared to correspond most frequently with student utilization of information were elaboration, summarization, and self-monitoring. Students could be seen to compare new information to what they already knew, either because it was a new and interesting aspect of the old (elaboration), or because it was not quite in keeping with the old and some adjustment in the schema seemed indicated (elaboration and self-monitoring). Students were also seen to compare old information with the new (a different direction of comparison), as a means of verifying the truth of what they had heard. Often these comparisons took place with the student re-stating what had been heard in his or her own words (summarization). An example of these uses of elaboration, summarizing, and self-monitoring comes from Mary, who listens to the lecture of "Cortesías" (Courtesies) and thinks:

> M: They're saying ... um ... you can say "¿qué tal?" and you're just ... like, being friendly, but you don't have time. That's interesting, cos it seems like a question to me. But then they're saying that time isn't as important there as ... as it is here ... I guess they mean that people are always in a hurry here, and there they take more time, and I can agree with that. I don't know, dinner being so late and ... tea, and everything.
>
> Int: You're thinking of (your experiences in) Argentina?

M: Yeah. I think it's better there (laughs). Oh, I think it's so nice, that you don't have to... worry about time so much, it's not so pressured.

Other examples of the way that new input is compared to and integrated with what is already in memory (or rejected) are presented in Exhibit IV-3. Interestingly, only the intermediate and upper level students made statements of this sort; the beginning level EEs had such trouble understanding the listening passages that there was, apparently, little cognitive space left over for the stage of integration. Also, the type of listening passage involved may influence what type of prior knowledge students activate. "Cortesías", "Vida en Marte", and "El Carbón" were all lecture-type passages, and each elicited extensive prior academic knowledge from the students. The other listening passages were not as "academic" as they were "dramatic" or "literary" and while they elicited elaborations, these tended to be personal in nature, as in judgments of the story's interest level.

Most of the listening passages elicited remarks from the students regarding the structure of the text, which suggests that "text structure" is a schema in itself that students refer to for a number of purposes, such as predicting what will come next and identifying the organization of ideas being presented. The "text structure" schema also includes notions of how the text should proceed; students noticed when violations of their expectations occurred, either in the story grammar (the plot line) or in the presentation of facts. Some examples of this recognition of text structure and sequence are:

EXHIBIT IV-3

Listening Think Aloud Excerpts Showing Student Use of Elaboration, Summarizing, and Self-monitoring During Utilization Stage of Listening

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A. Student notes that new information augments or agrees with old information and integrates the two:

- Mary, listening to "Cortesías" (Courtesies):

(Of the idea of using adiós (goodbye) to say hello) Well, I was thinking about that. It would be useful in the hallways cos when you see someone, you know, in between classes, you just say hello and really you mean good-bye.

- Theresa, listening to "El Carbón" (Coal):

The first thing I did was...I related "ignito" (what she heard for "lignito") to "igneous" which is a type of rock, which I knew from sixth grade or whatever, they do rock collections... Um...I realized what they were talking about, that the water receded and "presión" is pressure and...um...just they were relating to me how carbon was formed, and you know, I just kept on getting a visual picture of...the water is receding back and the trees are coming and the rocks are pushing down and making the moss, or the "turba" into the...um...ignito, or whatever.

B. Student notes that new information is not in keeping with the old, but appears to integrate the two:

- Carl, listening to "Cortesías" (Courtesies):

That was just talking about "hola"...and that you can use that if you want to talk to the person, and you want to start a conversation. It's news to me, I didn't know that. (Int: What had you thought before?) Well, you know, it's just like in English... whether you say hello or hi, you know. It has no...it has no bearing on whether you want to talk to them or not. We don't distinguish that way.

- Kathy, listening to "El Carbón" (Coal):

I thought it was sort of strange that they said carbon was a treasure, one big treasure. I guess I really don't think about it like that, this black old thing... And I thought it was a little strange that we got medicine from it, and that sort of hit me.

C. Student notes that new information is not in keeping with the old, and appears to reject it:

- Kathy, listening to "El Carbón" (Coal):

I thought it was a little funny that they said that it was the sun that we were burning up, and it's...it's not really the sun that we're burning up (laughs), but I thought that was pretty strange for them to put it like that. But they did, so...I mean, and then they went on to explain, but I still didn't see how they can dare call...what we were burning up the sun.

Okay, that's essentially an introduction that just told me what they were going to do, um ... they told what they were going to talk about ... [Theresa, listening to "El Carbón"]

... I thought it was kind of funny, they jump right from prehistoric times right up to modern times. All right, at first it took me ... sort of by surprise. I was thinking, wait a minute, we're supposed to be talking about prehistoric times, aren't we? And they jumped right into planes and ... and railroads ... [Kathy, listening to "El Carbón"]

Well, I thought, I didn't know what he was talking about with "shoes." I thought they were going off on a tangent, but they weren't. It was odd. I didn't expect him to come up with shoes. It's like throwing me a curve. [Carl, listening to "Prohibido Fumar en el Tranvía]

And I guess that's kind of her ... closing to the tape, as well as how to say good-bye. [Mary, listening to "Cortesías"]

That students recognized and used the structure and sequence of text in their L2 processing leads to the question of whether they also re-organized the information they had received so that some ideas were subordinate to others. This question corresponds directly to utilization issues, in that one aspect of learning, as proposed by cognitive theory, requires the student "to impose organization and to structure the information that has been acquired" (McLaughlin, 1987, p. 136). Research has shown that the ability to recognize how a text orders ideas or to organize ideas into hierarchies for one's self leads to better memory of text content (Gagné, 1985; Anderson, 1985). There is limited evidence in these data that students recognized the hierarchical structuring of ideas used by the text, and less evidence that they restructured what they heard or created hierarchies of the ideas for themselves. The several examples shown in Exhibit IV-4 suggest that the text must be relatively well understood and that a certain level of proficiency is required before students have cognitive space available for

EXHIBIT IV-4
Listening Think Aloud Excerpts of Student Structuring or Restructuring of Information Presented in Listening Passage

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A. Using the hierarchy provided in the text to organize a summary:

- She talked about metals, first of all, and... I think so, yeah, metals came first, and how, um...we build. And then for combustion, and how we power everything we make is...is with rocks, we use rocks for that. Um...minerals, I think, is the correct word. And coal is the most important mineral that we use. (Ben, El Carbón)

- I guess, as I was listening, repeating in my head the things that I heard. You know, repeating, all right, remember the oxi- the color red because it was oxidated, and then okay, putting it together. There were mainly 3 parts: the oxidated surface, the canals due to erosion, and the fact that there wasn't enough of the elements now to do that now, so it must have been a thing of the past. (Ben, Vida en Marte)

B. Creating one's own hierarchy or ordering of ideas:

- Okay, now they're switching people, now they're talking about somebody...I don't know, not that great a friend, not your best friend in the world. And about the, um... buenos días and buenas tardes and buenas and all that, fall in that category. (Carl, Cortesías)

- Okay, I noticed that they switched from prehistoric man to civil...civilized man. Um... I don't know, I think the first thought I thought was, um, why aren't they elaborating more on prehistoric man and how we got carbon in the first place? (Theresa, El Carbón)

- ...and then I knew it was some kind of satellite. And then, um, as it went along, I found out about the map-making. I didn't know too much about, like, they were talking about land formations, and I didn't really understand a whole lot about it. I knew I heard, um, all this stuff about the volcanic activity and things like that. I was just trying to piece it together. (Theresa, Vida en Marte)

C. Restructuring one's understanding of a concept

- Okay, first of all, I figured out that (el carbón) is not just a "combustible, es una materia prima." And I didn't know what that was at first, because I'd read over here on the vocabulary list, and then I figured out that materia pri- prima means, um...like, it can be used to make other things instead of just being used to be caught on fire and produce heat. (Theresa, El Carbón)

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encoding how information is hierarchically ordered or for manipulating the new information to create hierarchies of their own.

The discussion of utilization has focused to this point upon how student made use of the content or ideas presented in the listening passages through the medium of the L2. This type of utilization parallels what native speakers are expected to do in their own language - focus on ideas, not on the language itself. But the students involved in this study are also learning the language, and since "learning involves a constant modification of organizational structures" (McLaughlin, 1987, p. 138), these EEs might also be expected to access their schemata about Spanish. Instances of this type of utilization, however, were not common in the listening think alouds; those that did occur were related to the lecture called "Cortesías" where the content of the lecture was about Spanish greetings and courtesies (see Carl's remarks in both Exhibits IV-3 and IV-4). In examining all the listening think alouds available for these eight EEs, what seems clear is that listening is too fast paced for students to be able to examine and make use of the specific language forms they are hearing. They are focused almost totally upon understanding the message, which they lose track of when they begin to devote attention to the L2's surface structure, as the example below from Mary illustrates:

M: It seems fast ... she's talking about different expressions or ones that we've heard and used in class. And then I started ... sometimes what I do is, like, I say what they're saying. You know, repeating things. And ... if you listen and you say it, which is kind of what I did at the end, then you don't understand, I didn't understand.

(later in the activity) I guess I'm trying to keep myself from repeating the words like I did in that first ... first passage, because ... I think if I think too much about the word, how they say the word, then I don't think enough about what the word means. And, um, I think it's better to try and listen and ... listen to understand, instead of listen to repeat it.

Int: What is the purpose of the repeating, do you think?

M: I'm not really sure, I guess that's the way it sounds. I guess that's the way you learn, um, accents and phrasing and... and how to become, you know, to understand how they speak, instead of grasping for meaning. I guess that... to get a full understanding, you know, you have to listen both ways, and so that you get... both the way it flows and the understanding of what it means.

Thus, the utilization of L2 forms that was evident in reading (see prior chapter) seems counter-productive in listening, due to the consuming demands of, in Mary's words, "grasping meaning." The extent of attention these listeners could devote to the L2 independent of its meaning was whether or not the voices on the tape belonged to native Spanish speakers (Kathy), where the speaker was from (Eve), qualities of the speaker's accent (e.g., cutting off the "s" at the end of words), and how much trouble it was to adjust to that accent (all students).

Other Strategy Findings

A unique use of summarization was noted in the listening think alouds of Eve, an advanced level student who comprehended with great ease. Part of her thorough preparation before listening, consistent across semesters and interviews, involved reading the questions, and then re-stating them in her own words (summarizing). Exhibit IV-5 presents, in its entirety, her think aloud before listening in Spring 86, where she reads the sentences of the workbook introduction aloud and says what she is thinking (the reverse side of Exhibit IV-5 shows her using this same approach with the Fall 86 workbook introduction). Her unusual use of summarization appears to serve one very important function: She identifies and clearly states for herself what she is expected to do in regards to the think aloud interview

EXHIBIT IV-5

One Student's Use of Summarization: Identifying the Task at Hand

What the Workbook Says ...*	...and What Eve Says about the Workbook
You're going to hear a story called "Prohibido Fumar en el Tranvía."	So I'm thinking, you can't smoke on the whatever tranvia is.
It's the story of an old man who rides in the streetcar with a pipe in his mouth.	So I think, a picture of an old man riding in a streetcar, and I think of a San Francisco trolley, with a pipe in his mouth.
There will be six bells on the tape.	And when it said 6 bells I thought of, like, six silver bells on someone's foot or hat, & then it says on the tape, so that's a little different. You think of a ding.
Each time there is a bell, you will be asked to think aloud about how you have understood the story.	So I think, on the bell, I have to think.
Try to be as complete as possible, including any words you did not understand, figured out, or ignored, as well as any impression you have of what you have heard.	So now I'm going back to read this.
Each time there is a bell, you will (re-reads rest of sentence).	So I'm supposed to say what made me, helped me understand it.
(Re-reads last sentence again.) Where does the old man sit in the streetcar? Why does the conductor approach him? What does the conductor want?	So you think about where this guy sits, what the conductor's doing.
What's the passenger's response to the conductor's request?	So I guess what's the old man's response to whatever the conductor asks him, the conductor's going to ask him something.
What argument does the passenger use to explain his behavior? Does he convince the conductor?	Sounds like this guy is sitting in a bad place, so he has to- and the conductor asks him to move or something.
What do you think of the old man's argument?	So, whether it's good or bad.
Before we begin, what are you thinking about?	I'm thinking about how I'm going to do this.
(Int: Was reading the questions helpful?)	Yeah. Cos...I mean, I might be wrong, but it sounds to me like the old man's sitting in a place where people don't usually sit, & then the conductor comes and asks him to move and the passenger says why he's not gonna move, and then the conductor's convinced or not.

*Eve's unabridged think aloud, prior to the listening passage being played, Spring 86 interview. She is reading the workbook text aloud (left column), and saying her thoughts (right column).

EXHIBIT IV-5
One Student's Use of Summarization:
Identifying the Task at Hand
(continued)

What the Workbook Says ...**	...and What Eve Says about the Workbook
You're about to listen to a lecture called "El Carbón."	And when I see el car- carbón, I think of...what is that? That, that root...that, um...that flat stuff, I forget what it's called (sounds of scribbling), but in Mexico, we ate it a lot. ...It's called something-al-carbón, whatever.
This lecture is a combination of scientific and historical information.	Uh...sounds boring.
(Continues reading instructions without comment, until...) Some vocabulary words.	
Leña	that's wood,
patano,	I don't know,
helecho,	I don't know,
turba...	I'm not sure, sounds like turbulent or something like that. Materia prima sounds like...uh, material...well, it wouldn't be material, cos that's like materiales or whatever. Materia prima. And prima is liek...first or something. So...I don't know. (softly) I'll figure it out. Like first hand material or something, I don't know.
(turns page to questions, on interviewer suggestion) ¿Que combustible usaban los hombres prehistóricos?	Okay, it's talking about...um, what they used to burn or whatever.
Hace 250 (in Spanish) millones de años, el interior de America del Norte consistía en... (Re-reads questions, then the options listed beneath)	(mumbling under breath) Okay, what the planet was ma- I mean, whatever the continent was made of.
El material del cual se formó el carbón fue... plantas, rocas, animales, peces.	Okay...el...whatever carbón is made of.
Um...¿cuál de los siguientes productos no son derivados del carbón?	Okay, what doesn't come from coal. I guess that's what, uh, carbón...
perfume, jabones, plásticos, medicinas,	okay.

** Eve's unabridged think aloud, prior to the listening passage being played, Fall 1986 interview
She is reading the workbook text aloud, and saying her thoughts.

("... so I'm supposed to say what made me, helped me understand it") and what information she is expected to find in response to the questions ("What do you think of the old man's argument? So, whether it's good or bad"). By identifying task requirements in their specifics, she creates a powerful mind set to take her through the task.

Another intriguing strategy use, occurring in the think alouds of two of the advanced level students (Eve and Theresa), was imagery. An example earlier in this section related one of Eve's images of a horizontal plane with a diagonal from the sun to the Earth, her mental representation of the information she was hearing. Another is:

> And then she said orillas (riverbanks), I thought of oars. But I knew it was sides, whatever, and I kind of got hung up on that, and I was thinking about sides. And I imagined also a kind of... (strugges to find words)... bumpy plane covered with something that wasn't really water, it was kind of like a blanket.

Here, she converts information about the surface of Mars into what appears to be a three dimensional image. Such transformations are unusual instances of imagery, which tends to be used far more often to call up a textbook picture containing essential L2 information. But another advanced level student, Theresa, also found that the words she was hearing evoked images in her mind, as is shown below:

> Well... what happens when I hear things like, um... now it's like barco y, um... ferrocarriles and things like that, I ... have this visual image of the boat, the train, you know, things like that. That's essentially how I... how it goes. I get a visual picture, a visual image of what that, um... is about.

How these images contribute to understanding is not clear, except perhaps that they strengthen comprehension of the message by restating it in a different form (showing how imagery is a type of elaboration), which in turn should strengthen retention of the message, by providing alternative pathways for its retrieval (Gagne, 1986, p. 83).

Summary and Conclusions

The questions asked at the beginning of this chapter were what strategies and/or approaches are most useful when listening to various types of L2 passages and to what extent do effective students make use of prior knowledge gained through the medium of their first language? As has been seen, these eight EEs showed remarkable consistency of approach and strategy use in their listening work. For example, each one of them assumed an approach in which they ignored as many unfamiliar and unimportant words in the passage as possible, focusing instead on getting the "gist." For unfamiliar words deemed key to getting the gist, these students used all available clues to infer meaning, relying principally upon the strategy of elaboration to bring prior world and academic knowledge into working memory.

Theories of listening as a cognitive process consisting of perception, parsing, and utilization stages were discussed, and evidence was presented in support these as distinct but often overlapping phases of comprehension. Maintaining focus (or directed attention), a critical skill in the perception stage of language comprehension, was a ready skill in these effective students, but became difficult for the beginning level EEs who, disadvantaged by their limited L2 repertoire and unfamiliarity with the task of listening,

were seen to lose heart when too much of the passage was not understood. Interest in the passage was also a factor in determining the amount of attention given to the task.

These think aloud data make clear the beneficial effects of letting students see the questions they are expected to answer about the listening passage, prior to actually listening. Reading the questions and thinking about them before listening appears to facilitate all three stages of listening comprehension by: providing a focus for listening (helpful in perception), forewarning of the content (parsing), and defining a purpose for listening (helpful in utilization). These highly effective students used the questions to get a mind set on what they would hear and to call up what they already knew about the topic (elaboration) in order to predict possible content (inferencing). They then listened through the filter of their mind set, using the questions to zero in on important content (selective attention) while continuing to call up relevant information (elaboration) to help themselves understand the passage, and correcting or confirming their predictions as the material in the passage was presented (self-monitoring). The questions also provided an incentive for utilization of the information in the lectures, and in normal classroom activities would presumably help the student to organize the information received and to recall it, if note-taking were used as well.

CHAPTER V

Additional Findings of the Longitudinal Study: Writing in Spanish

Introduction

In each semester's Longitudinal Study interview, students were asked to write a paragraph about a picture provided in the student workbook, and to say aloud what their thoughts were while composing. Students were given complete latitude to choose what they wanted to say about the picture, whether to simply describe it or to use it as a springboard to make up a story (see Exhibit V-1, for a description of the pictures), and the think alouds that resulted were extremely detailed as to student thought processes while writing in the L2. This chapter of the report, then, addresses how the eight most effective students in the study went about writing in Spanish.

Review of the Literature

Writing, along with speaking, belongs to the broader category of human abilities called "Language Generation," which cognitive psychology breaks into the stages of: construction (deciding what to say), transformation (findings words for the message), and execution (the actual mechanics of writing with the hand or speaking with the mouth). The writing process itself is divided by cognitive researchers (see Anderson, 1985) into three stages, idea generation, composition, and rewriting, the coordination of which puts huge demands upon the capacity of the human brain as an information processor.

These three stages are quite similar to those postulated by Flower & Hayes whose chief work has been to investigate writing processes through the

EXHIBIT V - 1
Summary of Pictures Used as Stimuli
for Writing Activity

Semester	Level	Title of Picture	Description of Picture
Spring 86	1	Family Tree[a]	The picture is a family tree for the González family, showing from the grandparents, Ricardo and Susana, through the children, Carlos and Pilar (López), and the 5 grandchildren, Sergio, Pedro and Isabel González, and Teresa and Rosa López.
	3	Busy City Street[b]	The picture shows the intersection of two city streets, as imagined in a policeman's mind. He sees himself in the middle, directing traffic while some sort of chaos is taking place at each corner and along each street.
	5	Busy City Street[b]	Same as above.
Fall 86	2	The Party[c]	The scene is a party with a woman talking on the phone while, behind her, a couple dances, a young man plays a guitar, another serves food, and a girl sings, using the end of a broom as a microphone.
	4	Las Oficinas[d] (Offices)	A building is shown in cross-section, so that all 5 floors are seen, with the offices and their respective activities. Some of the rooms are: executive, secretary, dentist, waiting room, restaurant, & basement.
	6	Invaders from[e] Mars	A series of frames is shown, depicting a story in sequence. The frames are: listening to the radio, a planet blowing up, the arrival of spaceships, turning up the radio's volume, the announcer reporting, then face-down, the army, people leaving their homes, the aliens dying.
Spring 87	2 4 6	Crowded Hotel[f] Lobby	A cluttered scene shows much activity: a couple with a baby, checking in, a man and young girl chasing a runaway dog, a bellboy fallen, with suitcases around him, a woman reading the paper, and in the corner a man on the phone.
Fall 87	3	Busy City Street[b]	Same as Spring 86.

a-f: See Appendix C for a listing of sources for these pictures, as well as the pictures themselves.

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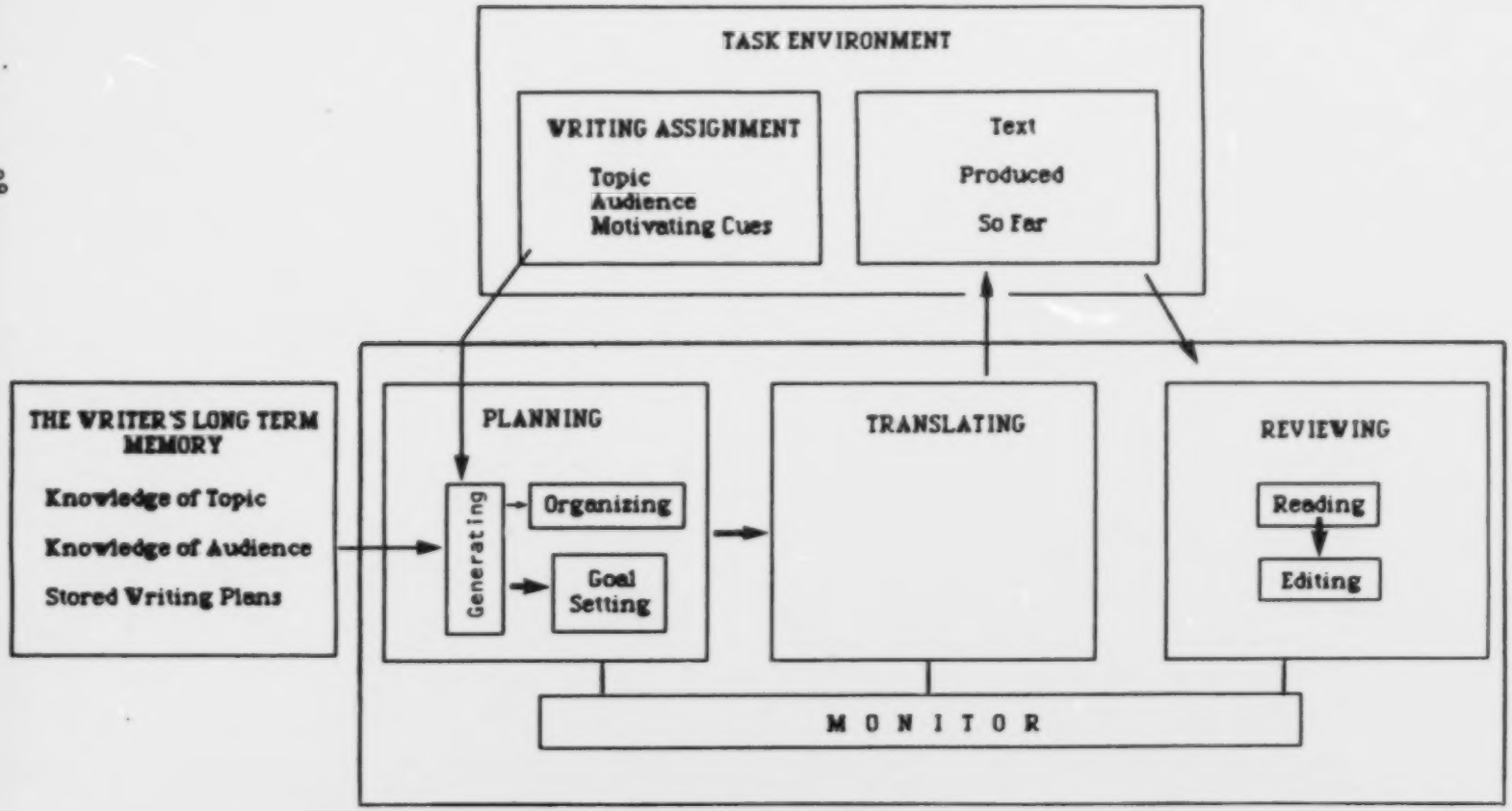
think aloud method and to develop a well-articulated model describing writing processes. These researchers label the stages of writing as planning, translating, and reviewing (Hayes & Flower, 1980), where planning involves generating and goal-setting, where translating refers to the production of language, and where reviewing is intended to improve the quality of the text and consists of reading and editing subprocesses. The structure of this writing model is depicted in Exhibit V-2.

In whatever way writing processes are divided out and labelled, research has made it clear that writing consists of separate stages where plans are made and organizational concerns addressed, ideas are generated, evaluated and sometimes revised, where words are matched to the meaning to be communicated, and where editing tends to be an on-going process, often interrupting other processes. Although the written text usually proceeds linearly, the stages of writing typically do not: transforming, for example, may be interrupted by the occurrence of a great idea, which leads to planning where to express that idea or to an alteration of organization and the discarding of text already written. Good writers understand that composing involves creation, exploration, and revision of ideas, while poor writers tend to become distracted from their ideas by concerns with the surface structure of the text (Zamel, 1982, 1983). The research that has been done to date has served to illuminate that writing is "a tool for learning and not just a means to demonstrate learning" in that it "helps to create and form ideas" as well as to express them (Raimes, 1985, p. 230). Research into writing in a second language appears to show the same basic L1 writing processes at work, with the writer struggling under the additional constraint

Exhibit V - 2

The Hayes & Flower (1980) Writing Model



Hayes, J.R., & Flower, L.S. (1980). Identifying the organization of writing processes. In L.W. Gregg & E.R. Steinberg (Eds.), Cognitive processes in writing. Hillsdale, NJ: Lawrence Erlbaum. (p. 11)

of limited knowledge of the vocabulary and structure of L2 (Larsen-Freeman, 1981; Zamel, 1983; Raimes, 1985).

Review of Prior Longitudinal Study Findings

In Chamot et al. (1988), preliminary findings were reported regarding the strategies that effective and ineffective students of Spanish use while writing. Some of these findings were:

(a) The difficulty of the writing task effects strategy use. At the beginning level of study, effective students used fewer strategies to write than did ineffective students, apparently because the effectives found the task much easier. The ineffective students were ill equipped for writing due to extremely limited knowledge of L2 vocabulary, poor motivation, and difficulty in maintaining focus.

(b) Effective and ineffective students at the intermediate level tended to use similiar strategies for writing. Effective students at this level used a greater number of strategies than the ineffectives, but they also wrote more.

(c) The strategies used most frequently by students during writing were: planning, self-monitoring, translation, deduction, elaboration, and substitution.

(d) Across the period of a year, students at all levels demonstrated improvement in their written products and a greater concern for the message being communicated, as opposed to the words of the message.

Considerations for Data Analyses and Interpretation

The think aloud method has been used in other studies of writing (Hayes & Flower, 1980; Jones, 1981, 1982; Perl, 1980; and Faigley & Witte, 1981) and has elicited concern that the task of thinking aloud interferes with the task of writing and changes its process, thus making the resultant data not representative of how people actually think when they write (see Zamel, 1983, p. 169). It has been our experience, however, that the think aloud is very well suited to the task of investigating how people write; most students sank quickly and deeply into the writing assignment and became unaware

that they were mumbling their half thoughts and ideas aloud. When they fell silent, the reminder of the interviewer to verbalize their thoughts appeared only minimally distracting to their concentration. The part most disruptive to their natural sequence of thoughts was, undoubtedly, when the interviewer interrupted to ask a question such as "Why did you do that?" They would then surface from their work, answer the question, and then return immediately and of their own volition to exactly where they had left the process, either simply continuing writing or by re-reading what they'd written to pick up the thread and then continuing. The depth of their concentration and the persistence of their efforts correspond to observations by Hayes and Flower (1980) that "writing processes are controlled by goals" (p. 19) such as organizing, and that interruptions to the goal at hand, either to edit or generate more ideas, or in this case, to answer a question, do not result in the writer losing track of the goal; rather, the writer returns to the goal when the interruption is over. Thus, this study found little reason for concern that thinking aloud changes the nature of the writing process.

The Exceptionally Effective Student, and Writing in Spanish

The stages of language generation as described by cognitive theory (construction, transformation, and execution) appear analogous, in reverse, to the stages of language comprehension (perception, parsing, and utilization) discussed in the previous chapter on listening. Anderson (1985) claims that "while none of the comprehension stages is simply the corresponding generation stage in reverse, the kinds of knowledge required in the corresponding stages do overlap considerably" (p. 374) and, indeed, the think aloud data confirm this. One of the limitations of the listening activity, mentioned in the previous chapter, was that the students had no strong

EXHIBIT V - 3

Excerpts of Student Writing Think Alouds
Illustrating Aspects of the Hayes & Flower Writing Model*

Aspect of the Model	Student Writing Think Aloud Excerpt
Task Environment: Writing Assignment	Sarah, looking at the picture, Spring 87: Am I supposed to pick one part of the picture? (Int: Any part, make up a story, whatever.) Oh. (examines picture and checks her L2 vocabulary store) I can just make up a story? It can be as crazy as I want it to be?
Task Environment: Audience	Eva, Fall 86: To write a paragraph...I probably just write it as it comes, because in Spanish class, which is not like English, if we write, if we get our thoughts through, we get a good grade.
Planning: Generating	Theresa, Fall 86: En el año...and then I'm just going to put down the, um, arbitrary year...1954. Don't ask me why. I think that's just an arbitrary year when there was a lot of UFOs kind of...mumbo jumbo going on.
Planning: Organizing	Jessica, Spring 86: I just kind of said I'm going to write about just what relation they all are, and then I decided to write about what she was doing and, I don't know, I guess as soon as I run out of this, I'll write about what some of them are doing.
Planning: Goal Setting	Mary, Fall 86: First thing I'm thinking is there's a lot of choices here, and I'm going to look to describe something which I know the vocabulary for, because there's no sense trying to describe something that I...I can't use...
Translating**	Kathy, Fall 86: En este momento toda la gente...turn off... I know how to say turn off the lights. I'm trying to think...is it the same with the radio? I don't know. I'm trying to think it's either pegar or pagar. I think it's pagar. So, I'm going to put that down. Now I think if it's got to have a personal "A" with it. No.
Text Produced So Far	Carl, Fall 86: All right, so in the next floor we got two rooms. Yeah, well, the paragraph doesn't sound too good, starting each sentence with "en." En la fila tercera...hay un hombre en su oficina...y...su...secretaria... Second floor is...a different sentence structure now, cos...cos it looks better.
Reviewing: Reading	Time did not allow for this type of review of what had been written. Different from editing in that it is not spur of the moment, but systematic.
Reviewing: Editing	Eva, Spring 87, editing for surface structure: Ellos están muy felices something about their baby, muy felices, felices with a "c" or a "z"? Fe-lic- I think it's a "c", cos it's "-es" after it, okay. Jessica, Fall 87, editing to improve clarity of message: (Has written "Están yendo a los trabajos", "They are going to the jobs.") I was going to write "al trabajo" (to work), but then I thought, no, cos there's two people, so I'd better say "to their jobs." Or maybe I'd better say... a sus... (changes "a los trabajos" to "a sus trabajos", which means "to their jobs")

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EXHIBIT V - 3

Excerpts of Student Writing Think Alouds
Illustrating Aspects of the Hayes & Flower Writing Model*
(continued)

Aspect of the Model	Student Writing Think Aloud Excerpt
Monitor: Editing or generating interrupt other processes, but goal-orientation persists & student returns to original process	Sarah, Spring 87: (Has written: "Señor Blanco...") Hm...talks on the telephone. (Writes "...está llamando...) He is talking to...is this right? I was trying to think if I had to have the (personal) "A" or not... (And she is unsure) If I was saying, like, he is talking to. Right now, we're going over all these verbs for the final. And you have to write down, like, the present, the past, the future, and the present participle. And she always, he is, he is talking with someone, or he is studying, or something. So I figure, that must be right. (Begins writing again, finishing the sentence "...a su esposa.") I was just, like, trying to think of who he could be talking to. Trying to get someone into my mind.
Writer's LTM: Knowedge of Topic	Ben, Spring 86: I know I can write about the baseball game going on over here, and about, um, oh, I would write that he broke the window...I know roto is broken, but I don't know the verb to break. El policio here, I can say that he's thinking about, uh, un accidente de automoviles, um, durante, I don't know the word for fire - or robbery either, so there are two thefts that are going on that I can't talk about.
Writer's LTM: Stored Writing Plans	Mary, Fall 1986: Okay, I guess when I write a paragraph, I'm trying to write it the same way I would write an English paragraph, like, I've been taught in English, with an opening sentence, you know, and then...supporting sentences, and then the conclusion...

* Hayes & Flower (1980), p. 11. See Exhibit V-2.
** The stage of translating is not to be confused with the strategy of translation. See text discussion.

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incentive for utilization of the information or language they were hearing (such as a test to be taken). In writing, however, it becomes evident how well students have previously utilized information (in other words, how well they integrated it into their existing schemata, or learned it) and how they retrieve the stored information, because the process of writing in L2 requires that they independently generate the L2, check it and make corrections as necessary.

The model developed by Hayes & Flower for writing in L1 (see Exhibit V-2) corresponds remarkably well to the process of writing used by these 8 EEs to produce their paragraphs in L2. Exhibit V-3 presents excerpts from student think alouds that illustrate each stage of the Hayes & Flower model (planning, translating, reviewing), as well as examples of how the task environment (the writing assignment and the text produced so far), the monitor, and the writer's long term memory contribute to the production of a written document. The only two facets of the Model not apparent in the student think alouds are (a) concern with audience, a "Task Environment" issue, and (b) a lengthy and systematic re-reading of the text produced, a "Review" issue. In regards to "Audience", it is not clear whether students were ignorant of the importance of this concern in structuring their written product, or whether the nature of the assignment itself (where no particular audience was specified) made this concern negligible. The latter seems the more likely reason for their disregard, especially given Eve's remark that paragraphs written in Spanish class were not graded as rigorously as compositions in English class: Getting "thoughts through" in Spanish was sufficient for getting a good grade. That students failed to re-read and evaluate their work in depth seems also the result of the think aloud

assignment which gave them no time for such a critical self-evaluation. Obviously, if teachers want students to develop "Review" skills that go beyond editing for mechanics, classroom writing assignments must include the time to re-read in a thorough and critical way.

The nature of the think aloud assignment also effected the type of information students needed to access in long term memory. Students were not asked to write persuasive arguments or essays that required them to search their memories for information learned in science class, for example ("knowledge of topic"); rather, the memory searches they conducted were largely linguistic in focus, as in the excerpt from Ben, where he analyzes the picture for what he knows how to say in Spanish. This effect of the content of the activity is similar to the effects noted in Chapter IV for listening, namely that narrative stories do not tend to require academic elaborations to knowledge other than that gained in Spanish class. Students occasionally did draw in information (elaborations) from the world, such as Theresa's decision to use the year 1954 in her paragraph because "there was a lot of UFOs" then and she was writing about an invasion from Mars (excerpt appears in Exhibit V-3 under "Planning: Generating"), but this type of "world-knowledge" information was not integral to creating the paragraph, as "Knowledge of Topic" in academic compositions so often is.

What neither Exhibit V-2 nor Exhibit V-3 can show, however, is the truly recursive nature of writing. Both the model and the excerpts make writing appear as if it proceeds linearly, which it most emphatically does not. The excerpt presented in Exhibit V-4 (drawn from Mary's Fall 1986 think aloud) is intended to show how students jump back and forth in their concerns -

EXHIBIT V - 4

Writing as a Recursive Process: Excerpt of Mary's Think Aloud

Sentence produced: **El dentista tiene muchas personas que necesitan los dientes limpios .**

Part of Writing Model in Use	Student Think Aloud	Learner Strategies in Use
Planning (generating)	I'm going to talk about the dentist & I'm trying to think, what can I say about the dentist? Um...	Plan (general) Q (self)
Translating* Long Term Memory	El dentista tiene... I was going to write "muchos", many patients, but now I'm ...thinking how to say patients... I'm thinking, again, of another way to say that...um... muchas personas que...	Plan (PL) Tr (W)* Substitution
Planning (generating)	Okay, well, I was going to say: The dentist has many people that need...um...their teeth clean, I don't know, they need...need work...(laughs), I don't know, but then	Plan (PL)
Translating*	I'm thinking...once I have the idea of what I'm going to say, I'm thinking how c- (mumbles through a jumble of partial phrases and false starts)...In other words, I have	S-monitor
Reviewing (editing)	two verbs in the sentence that apply to different things and I don't know whether I can have a sentence that works. Um...but I'll try it anyway.	Deduction DM
Translating* Planning (generating) LTM Translating* Reviewing (editing)	(writes necesita, pauses) I'm thinking of what...what they can need... They need...okay, I'm thinking that they need... something with their teeth, they could need their teeth clean...necesitan, um...teeth, clean teeth, they need clean teeth, and I could say that, um, dientes...okay, limpiar is to clean, um...limpias - el diente, yeah, and then limpios (writes this), dientes limpios.	Plan (general) Plan (PL) Elab (world) Translation (W) Transfer (Sp-Sp) S-monitor (AUD)
Reviewing (editing) Reviewing (editing) Reviewing (editing)	I think it'd be better to say "need their teeth cleaned"... ...que necesitan los (adds los) dientes limpios. Need clean teeth, I don't know, that sounds like they're going to stick them in the dishwasher.	S-monit (STYLE) S-monit (prod) Elab (personal) S-monitor

*Translating, in the terminology of Hayes & Flower (1980), means the process of transforming the message to be communicated into words. It is not to be confused with translation, the learner strategy, which refers to seeking equivalencies between languages (e.g., dientes=teeth).

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planning, editing their plans, beginning to write and getting bogged down immediately, so that more planning is necessary, and so on. The column on the left classifies the focus of Mary's concern according to Hayes & Flower (1980) model (planning-generating, for example), while the center column presents her verbatim think aloud while constructing this one sentence "El dentista tiene muchas personas que necesitan los dientes limpios" (The dentist has many people who need clean teeth). On the right is the learner strategy classification of her thought processes and problem solving behaviors.

Examining the left column shows how writing folds back on itself continually. Mary begins by generating plans of what to say, deciding to discuss the dentist and wondering what she can say about him. Reading the entire excerpt shows that she planned the sentence in two parts: "El dentista tiene muchas personas que necesitan" came first, with the vague notion of completing the sentence with something like "their teeth clean" or "they need work." Before addressing the sentence's end phrase and planning it out thoroughly, however, she moves from planning the first phrase to translating it (or composing, in Anderson's (1985) terminology), where finding words for her message immediately becomes problemmatic ("I'm thinking how to say patients"). This type of problem, although not exclusive to second language writing, occurs so continuously, and with even the most effective students, that it can be considered the chief difficulty facing the L2 writer.

What Mary does to solve her problem is "think of another way to say" what she wants to say, or substitution, the strategy used most frequently by all eight EEs when faced with this problem. Thus, her composing of the first

phrase into actual words required dividing it into two parts, "El dentista tiene", which she produced easily, and "muchas personas" which required a search of long term memory and a substitution of known words for unknown words. Then she returns to planning, and takes up the end phrase which proves very troublesome to produce, due to uncertainties over syntax ("I have two verbs in the sentence that apply to different things and I don't know whether I can have a sentence that works") and what exactly to say ("I'm thinking of what they can need"). The recursiveness of the planning, translating, and editing apparent in this excerpt is very typical of how the other students wrote as well. What seems particular to second language writing is the re-planning that becomes necessary when the student bogs down in the middle stage, translating an idea into actual words, and must change what he or she was going to say in order to side-step key deficits in L2 knowledge. In fact, one of the prevailing traits of the EEs while writing was their great flexibility in thinking of alternative ways of expressing ideas, whether that was to find a synonym, to invent a word based on knowledge of other languages (transfer), to find a replacement word or phrase (generally less specific than the original), to describe in place of the word, or to come up with a new plan altogether. Exhibit V-5 shows examples of students using the various types of substitution strategies; these appear identical to what the second language acquisition literature generally refers to as communication strategies which learners use while speaking in the L2. Faerch and Kasper (1984) have classified communication strategies as either reduction strategies (attempts to do away with the problem, generally by giving up the communication plan) or achievement strategies (continued efforts to communicate the same idea, despite difficulty), and suggest that the latter may take forms such as:

- code-switching, foreignizing, or translating from other languages
- substituting, paraphrasing, word coining, or restructuring in the L2
- asking for help
- retrieving information from memory.

This framework (presented in Ellis, 1986, pp. 184-85) is used to organize the student examples presented in Exhibit V-5. Surprisingly, these effective students did not tend to ask for the interviewer's help, nor did they spend much time in attempting to retrieve information from memory. Rather, their predominate solution to not knowing a word or phrase in Spanish was to substitute another swiftly, thinking either in English or in Spanish, and if that word or phrase did not serve their purpose, then they immediately substituted another. The fluidity of their substitutions is noteworthy because it suggests that, for writing in the L2, it is important not to become stalled in one plan or idea but, rather, to generate continuously, as the example below illustrates:

Sarah (Spring 87, writing about the man on the telephone in the Hotel Lobby picture):

S: (Writes "Su avión está tarde"- his airplane is late.) I'm trying to think: he won't be home for, like, dinner or something, but I don't know how to say, he won't... oh wait! [a I can say it's not possible! I don't know how to say dinner. [b Oh, I can just say it is not possible for him to be home now. No es posible por él... to be at home.

a) Restructuring
b) Restructuring

Int: What are you thinking?

S: [c If it's estar or... for him... oh, no it should be to come home now. How do I say come? (softly, to self) (d Hm... I'm looking... seeing pages in the book and trying to think of to come. (e Hm... for him... to drive home now. (Writes "... por él conduce ahora.")

c) Retrieval Avoidance Substitution
d) Retrieval
e) Substitution

Written along the side of the excerpt are the communication strategies Sarah used while producing the one sentence "No es posible por él conduce ahora"

EXHIBIT V - 5

Student Writing Think Alouds:
Substitution as a Communication Strategy*

Reduction Strategies

- Avoidance of Difficult Structures or Rules in L2

  Y los Martianos vienen, and I'm using present tense because I'm really bad at tenses, los Martianos vienen a la planeta... (Eve, Fall 86)

- Abandonment of Plan

  (Points to person in picture holding a broom) Here I was thinking maybe I'll use "usar" and then get the word for broom or something, or cleans, I don't know. Uses the broom, cos I didn't know sweep, I don't know that word. (Later in writing activity, after she's written several sentences) I think I'll go to these two people, I'm going to skip that person, cos I don't really know how to say sweeps or broom or whatever. (Jessica, Fall 86)

Achievement Strategies

- L1/L3-based strategies (making use of other languages):

  It seems like this policeman could be doing whatever he wanted. Personally I don't know, no sé, no sé por qué, cuando hay un agente, hay so many crimes, so many robb-, hay tantos, shoot! This is when I have to go French, for robbers. Steal is voler in French, so I assume it's voler in Spanish. So I would say something like hay tantos voleros... (Carl, Spring 86, coded transfer)

- Substitution (replacing an L2 form with another):*

  (writing about "invaders from Mars") I'm trying to think of a good word for ship or vessel that's not... I mean, barco is ship, but that's not quite what I want. But I can't think of it, so I'm going to think of another way. (Writes "máquina", which means "machine") (Kathy, Fall 86)

- Paraphrase (replacing L2 form with a description):*

  Now what I'm doing is trying to describe what happened to the busboy, to, uh, to... Now I'm thinking what to call him. El chico que lleva los, los, las maletas, yeah, el chico que lleva las maletas. (Which means "The boy who carries the suitcases") (Ben, Spring 87)

- Word coinage (replacing L2 item "with an item made up from L2 forms"):*

  I'm thinking the hole, and I'm trying to remember hole. Se cae en... now I'm thinking, well I can't say hole...but, um, I can try and think of a way to get around it, se cae en un... en un área de construcción, which isn't specific but you can... I'm assuming the reader will understand. (Theresa, Spring 86)

- Restructuring (developing "an alternative constituent plan"):*

  Where they're checking in, you've got a husband and wife. So we got Señor Fúlano (mispronouncing it)... Fulano (correcting pronunciation)... y su esposa y su... this husband, is it his son or his daughter? I'll make it his daughter, hija...are checking in... I'm going to look it up. (Does so unsuccessfully) It doesn't have it. Oh well. So I can change it. I'll just say, they are getting their key. (Carl, Spring 87)

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* The examples marked with an asterisk were coded as the learner strategy of substitution. This typology of communication strategies is drawn from Faerch & Kasper (1984), as presented in Ellis (1986), pp. 184-185.

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("It is not possible for him to drive now"). Her two attempts at retrieving information from memory (whether to use "estar" or "ser" for "to be", and how to say "come") end in default and a speedy substitution of another phrase, very characteristic of these effective students. Rather than use the semantic field to recall information, a retrieval strategy suggested by Faerch and Kasper (1984) and cited in Ellis (1986), she uses the semantic field to generate substitute phrases until she arrives at one that she can say. A Spanish 2 student at the time, she generates in English and seeks the match in Spanish. Below is an example from Eve who, as a Spanish 6 student, generates the substitute words in a mix of Spanish and English, trying to depict the next scene in the story "Invaders from Mars", which shows the announcer face-down, microphone still clutched in his hand.

Has written first part of sentence: El señor se hace más fuerte el volumen porque el anunciador dice que los Martianos ahora están aquí...
Translation: The man puts the volume louder because the announcer says that the Martians are here now...
Concluding phrase she eventually writes: ...y abruptamente no se puede oir nada.
Translation: ...and abruptly nothing can be heard.

Eve: ...okay, están aquí y...abruptamente...I looked at the next picture, well, he looks dead, abrup- oops, abrupta-men-te (sounding it out as she writes), abruptamente, um, is collapsing...abruptamente, um ...cesar? (laughs a little) Stops talking, um...bueno, abruptamente... no se puede oir nada. (writes this)

Eve's search for a useable way to describe what has happened to the announcer ("he looks dead") and to advance the storyline follows the sequence: is collapsing, cesar, stops talking, no se puede oir nada. What keeps her searching is not necessarily unknowns in her L2 vocabulary but words that do not completely express her idea, a stylistic self-monitoring apparent in all the upper level EEs. "I knew cesar was the wrong word,"

she says. "When I said "stopped"... I was thinking about how it doesn't mean exactly "stopped" in English." EEs at the lower levels self-monitored in this way far less, presumably because of less proficiency in Spanish and thus less choice about words (although they did show awareness of nuances of meaning for the words they did know, such as "chicos" and "muchachos"). For beginning level EEs, then, substituting was generally a matter of finding any words that would work to express meaning. In the excerpt from Sarah above, for example, two searches for alternatives were necessary because she did not know certain words in Spanish (below, the underlined words indicate the problem area) and took the following paths:

Action/ Intent	Part of sentence in focus	Part of sentence in focus
Planning	He won't be home...	... for dinner or something.
Substituting	It's not possible for him...	... to be home now. ... to come home now. ... to drive home now.
She Writes	No es posible por él...	... conduce ahora.

According to cognitive theories of spreading activation, searching is done in associative chains, where the first idea retrieved is used in the next probe. Although students were not often observed to search memory lengthily for missing L2 items (as has been said, they favored substitution), when they did, the search moved in these "associative chains", or in Ellis's (1986) terminology, through use of the semantic field. The example from Mary below, as she tries to remember the word "suelo" (floor), illustrates the process by which "the learner identifies the semantic field to which the item belongs and runs through items belonging to this field until he locates the item" (Ellis, 1986, p. 185).

Mary, writing about "A Crowded Hotel Lobby" in Spring 87:

M: I'll just say "And the suitcases are on the ground." Now I've got to think of suitcases. (laughs) I know it begins with ... (mumbles)... It just popped in. Maletas...

Int: (reading what she is writing) Las maletas están ... What are you thinking?

M: I'm thinking "floor"... Trying to think of the vocabulary word. I know we had it.

Int: Tell me how you're trying to remember.

M: Hm... I'm just thinking of the unit that- I can remember the picture in the unit but, I don't know, I can't think of it. [...] I know the picture, with the roof and, um... limpiar, if you mop the floor, you "barrer el suelo", there it is. Suelo.

In searching for "suelo", Mary starts with the memory of the picture where she learned the word; finding this unproductive, she moves closer semantically to the word by using it in a sentence ("if you mop the floor..."), which brings her, via the more general "limpiar" (to clean), to a phrase using the needed item ("... you barrer el suelo, there it is"). This pattern of activation appears to spread from the general to the more specific, not just in Mary's work, but in the work of the other EEs as well, with each memory probe moving the student closer to the desired word. However, "some criterion for terminating search chains is essential to prevent the process from getting lost in associative reverie," claim Hayes and Flower (1980, p. 13) and suggest that such a criterion might be "one irrevelant item." In their work "the most persistent memory searches... never extended more than three retrievals beyond useful material." The latter statement was true in the Spanish writing protocols as well. If a way to express the idea could not be found within three tries, then the idea was abandoned. As Mary comments in another of her searches, "I guess I'm going

to give up because... it's not, you know, worth bothering." This is particularly true when other useful words or ideas come readily to mind.

One aspect of retrieving information from memory that these think alouds show is that the use of imagery is generally unhelpful in calling up the desired word. Students are able to remember the picture that their book used to present the item in question, as the above example from Sarah shows, but are not usually able to recall the item itself. Mary's use of imagery, while ultimately successful, was initially unproductive; in fact, in the end her success appears more due to restructuring the search from the image to the use of the desired item in a sentence (a semantic search).

The general unproductivity of imagery as a retrieval strategy relates back to the issues of utilization mentioned earlier in this chapter. In Mary's case, the image served as a starting place for her search of memory but, given Hayes & Flower's (1980) finding that memory searches of their subjects never exceeded three attempts at retrieval, and given this study's finding that these highly effective students prefer substituting to searching memory, the probability that a student will persist in using an image until the information is recalled seems slim. It might be concluded, then, that for the purposes of learning, those cute little drawings in textbooks may actually detract from the learning of the vocabulary item or concept: what is learned (and remembered) tends to be the picture. In contrast, material seems more easily remembered when the elaborative effort originally came from the student, as the example below, also from Sarah, shows:

(Pointing to scene in picture where group of kids are playing baseball): I'm, like, saying in English and then translating it into Spanish, so... four boys are playing baseball, and they hit a window.

(Writes "Los chicos") Um... were playing... oh, and that's the imperfect. Jugaban... beisbol...

Int: What did you just think?

S: On my notebook I've written "They play." And if they were doing it or it used to be, that's imperfect.

(Later in interview, trying to write "Three people were listening to a radio", she stops herself from putting "listen" in the past tense, thinks of what she'd written on her notebook, and uses "escuchaban", the imperfect "were listening", instead.)

Clearly, Sarah at some prior time wanted to be able to remember when to use the past tense and when (and how) to use the imperfect, and so noted the information down on her notebook, an action which now serves her well because she is able to retrieve and use the information as she writes.

Other strategies that were observed to aid students in retrieval of information from long term memory are: auditory/visual self-monitoring, world elaborations, academic elaborations of past activities where the item to be recalled was actively used, and academic elaborations where relevant L2 schemata are accessed. Some examples of these strategies in use are presented in Exhibit V-6. As has been mentioned, however, these students preferred not to belabor memory searches and when they did search their memories, it was always to recall linguistic information. A different sort of writing assignment (for example, to write a persuasive letter about a particular topic) would most likely result in greater need to search the contents of memory than these writing assignments did.

EXHIBIT V - 6
Examples of Strategies Used During Writing
To Retrieve Information from Long Term Memory

- Auditory/Visual Self-monitoring and World Elaboration

  All right, I'm going to start with the dog as the subject. Say that he hit...what I'm doing now is thinking of a word for "knock" that I thought would be better than "pegar"... I'm trying to remember, there is a sign on the door in the place where I lived that said, "Knock before you enter" and I can't remember the word. I think it begins with "g." Trying to remember... G- g- gh- I think it's golpear. Okay. El perro golp- golpear? gol- golpea...al chico que lleva las maletas y él se cae. (Ben, Spanish 5, Spring 87)

- Academic Elaboration: Past Activities

  (Writes "El chico toca la guitarra y bebe coca-cola.") I had to think about "toca" because I wasn't sure if it was "canta" or "toca" because we used them more last year than this year. (Int: How did you decide?) Last year we had to put down what we did, and I was going through that and I was remembering that I put down "toca la piano" or "el piano", because it's not possible to sing a piano. (Sarah, Spanish 2, Fall 86)

- Academic Elaboration: Schemata

  This is kind of funny, but we did a unit with a hotel in Spanish, and I always thought of the guy carrying the suitcases as the monkey. That's mono, which is just like mozo. Here's a couple at the desk. Looks like he is going to firmar el registro. That is something else in the unit, different phrases from the unit are popping into my head. He's got the llave. (Mary, Spanish 4, Spring 87)

- Transfer

  I was just going to say something like "the afternoon is very busy" and kind of give a general introduction. (pause) I'm thinking if tarde is la or el, and mking sure that it's the right word for afternoon. (pause) It's la. I can remember, because of "buenas tardes." (Jessica, Spanish 3, Fall 87)

- Automatic Associations due to Strong Initial Elaboration

  (Writing) No oye los gritos porque, um, trabaja con una máquina que hace mucho ruido. Hace mucho ruido is, um, it's a phrase that you learn, it's a spontaneous... because Señora has, somewhere I remember it from her saying it, hace mucho ruido. It has a flowing sound to it, and, um, I think she said it pertaining to music, horn instruments, but I still remember it, and it just sounds like a natural phrase to me. (Theresa, Spanish 5, Spring 86)

- Automatic Associations due to Repetition

  Um...un anuncio del radio que, um...dijo... (writing) ...um, dijo for me, I just, you know, preterite, I'm trying to think in preterite right now, um...it's automatic mainly because it's an irregular verb and because I memorized the irregular preterite verbs, but probably any other preterite verb...I'd probably have to conjugate. Dijo que... (Theresa, Spanish 5, Fall 86)

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One aspect of student writing that the think aloud data make very clear is that these exceptional students tend to plan and compose in phrase-level units, or constituent groups, similar to the way in which they were seen to parse while reading, showing the interrelatedness of language comprehension and language generation. Because of the information processing limitations of the human brain, it becomes necessary for the writer to break the task of writing down into sub-parts which are more cognitively manageable (Flower & Hayes, 1980). This is particularly true of the L2 writer, who at every turn encounters difficulties and uncertainties about the foreign language. Certain aspects of the L2 may be so well known that little or no cognitive energy needs to be devoted to calling them up from memory and using them (called automatic processing by Shiffrin and Schneider, 1977); the remark by Theresa in Exhibit V-6 and the ease of her use of "dijo" is an example of automatic processing, "a learned response that has been built up through the consistent mapping of the same input to the same pattern of activation over many trials" (McLaughlin, 1987, p. 134). In contrast is <u>controlled processing</u>, which is not a learned response but requires that nodes in memory be deliberately activated in a sequence.

> This activation is under the attentional control of the subject and, since attention is required, only one such sequence can normally be controlled at a time without interference. Controlled processes are thus tightly capacity-limited, and require more time for their activation. (McLaughlin, 1987, p. 135)

Because the skill of L2 writing, and its component sub-skills (e.g., deciding on topic, retrieving lexicon, using syntactic rules) is still a controlled process for these EEs, it requires enormous attention and, thus, tends to proceed in a seemingly fragmented way which is ultimately unified by the writer's knowledge of his goal. <u>Planning</u>, then, is the hub of the writing wheel, for it allows students to divide the writing of a sentence (or even a phrase) into

subparts, each of which can be dealt with in turn. These students often began their planning with a general focus ("I'm going to talk about the dentist") and moved to the specific ("What can I say about the dentist? El dentista tiene...) and, as many of the examples in this chapter illustrate, students did not always generate a complete sentence-plan but often developed one in phrases while actually writing. When students were moving in such phrase-level groups, as Theresa is in the excerpt presented in Exhibit V-7, they typically planned the first phrase unit and wrote it, devoting great attention to dealing with the problems that the composing process entails, and then they went on to planning and writing the next phrase unit. Theresa plans the sentence she ultimately creates in three phrase units, writing each one before proceeding to planning to next: The father and the son are travelling, in a car, when the son says he's tired. The planning and composing process Theresa used to generate this sentence is summarized below, showing that executing the plan (composing) typically requires further sub-division of the L2 sentence, so that the problems each learner has with the L2 can be addressed as separate issues.

Part of Sentence In Focus	Problem/ Decision	Part of Sentence In Focus	Problem/ Decision
Constitutent Group 1: El padre y el hijo...	No apparent problem.	...estaba viajando...	Preterite or imperfect?
Constituent Group 2:	How were they travelling?	...en un carro...	No apparent problem.
Constituent Group 3: ...cuando...	What verb form should follow use of cuando?	...cuando...	What can happen?
..cuando el hijo dijo...	No apparent problem.	... que estaba cansado.	Can you say this?

EXHIBIT V - 7

Student Writing Think Alouds:
Planning and Composing in Constituent Groups

Theresa, Spring 87, writing about "The Crowded Hotel Lobby":

Sentence she produces: El padre y el hijo estaba viajando en un carro, cuando el hijo dijo que estaba cansado.
Translation: The father and the son were travelling in a car, when the son said he was tired.

T: [a I'm going to start, like, from the outside.

Int: (reading what Theresa has written) El padre y el hijo... What are you thinking?

T: [b Preterite, imperfect...I kind of have a tendency to pause on the verbs. (Writes "estaba viajando") [c Were travelling, essentially, that's the easiest construction for me because it requires no thinking about irregular verbs, things like that, you just say "was travelling." [a Plus the fact that it's background information, so it's imperfect, it lends itself well to imperfect.

[e I'm now thinking, what were they travelling? How were they travelling? Hm...carro. (Writes "en un carro").

Int: What are you thinking?

T: [f I'm thinking cuando, I'm thinking all the things that surround cuando. Like we just learned subjunctive, we just reviewed it, and cuando could be imperfect or preterite or subjunctive, or anything you want. [g So I'm thinking, well, I'll just, gonna have to decide that. I don't, like, compose sentences in my head, I just run along and...see where it goes. [h Cuando, um... I'm thinking, what can happen? What terrible things can happen? Hm...[i cuando el hijo dijo, that's automatic, automatic reaction there, you know, you memorize, hm... dije, dijiste, dijo, dijeron, it's just, you know, something you memorize. [j Que...Can you say, I'm just thinking, can you say "que..." I'm thinking tired...[k here I go with the estaba again...estaba...

Int: (observing student making a correction as she writes) Oops. What was that?

T: [l I just misspelled it. Can-sado. [m Checking the endings here. [n El hijo dijo que estaba cansado.

a) Plan (DISC)
b) Deduction
c) Plan (PL)
Tr (PL)
S-management
d) Deduction
e) Q (self)
Plan (PL)
Elab (creat)
f) S-monitor
Elab (acad)
Deduction
g) Problem ID
h) Q (self)
Plan (gen)
Elab (creat)
i) Automaticity
j) Q (self)
Tr (W)
Plan (PL)
S-monitor
k) S-monitor
(STYLE)
l) S-monitor
(prod)
m) Deduction
n) Summarizing

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Part of Sentence In Focus	Problem/ Decision	Part of Sentence In Focus	Problem/ Decision
Group 3 (continued):			
... estaba ...	Repeating "estaba" (style concern)	... cansado ...	Spelling.
... estaba cansado ...	Subject-verb agreement	... el hijo dijo que estaba cansado.	Re-reading, uniting parts, checking phrase unit.

To reduce the burden of generating and writing a story in the L2, Theresa also makes use of highly familiar routines ("estaba viajando" and "dijo"), a technique the other EEs employed as well.

Another aspect apparent in Theresa's sequence of planning and actual composing of the sentence in Exhibit V-7 is that the constituents are broken into "subject-verb-object" groups. This was the typical grouping used by the other EEs as well. Even when students planned a complete sentence before attempting to write anything, the composing stage tended to be divided so that S-V-O concerns were addressed separatedly and sequentially. An example of this is presented in Exhibit V-8, an excerpt from Jessica's writing think aloud where she transforms her planned sentence (Miguel is serving food or something) into actual L2 words. Although she is operating from a plan that is a complete sentence, she nonetheless focuses upon composing in three parts: subject concerns (whether to repeat Miguel's name, since it appeared in the previous sentence), verb concerns (a word for "to serve" and how to conjugate an IR verb), and object concerns, first the direct object (whether to use "food" or a more specific term), and then the indirect object (translating "to his friends" into Spanish). It should be noted that the beginning level EEs showed a far greater tendency than the

EXHIBIT V - 8

Composing in Subject-Verb-Object Groups: Excerpt of a Student Writing Think Aloud

Jessica, Spanish 2, Fall 1986: Sentence produced: **Serve comida a sus amigos .**

Text produced so far, serving as an introduction: Es un partido de Miguel.
She plans to say next: Miguel is serving food or something. ← Plan (SL)

SUBJECT:
S-monitor (STYLE)

J: I'm trying to think whether to use "él", or I'm not going to use a name. I don't think I'll use a name, cos I just said Miguel, I don't need to repeat his name.

Int: (observing that student has taken up dictionary) What are you looking for?

VERB:
Resourcing Tr (W)

J: A word for serving. ... Okay, "serve" - servir. Okay. So, now I'm trying to remember if it's an "e" or an "a" that goes there. Hm...

S-monitor (prod)

Int: What are you thinking?

S-level Deduction*

J: I don't know, but I know that I should know this. It's a basic IR verb. Maybe it's just an "a."

Int: How did you decide that?

Plan (STRAT)

J: (pause) I don't know. Wait a minute, maybe I'll just... I think I'll just think of another word. (laughs) I'll look it up, my mind is blank, today is Monday. Um... (sighs) Geez...

Int: What are you thinking?

Transfer (S-S)

J: I'm trying to think of another word that ends in IR... venir, it's a simple one, and we've done that. Viene, I'll just...okay, I think it's an "e." I decided it's "e" because of viene. Okay. Food. Um...

Elab/S-level

Int: What are you thinking?

OBJECT:
Plan (PL)

J: I was thinking whether or not I should just use food, or if I should try to use a more specific term. I think I'll just use food, because I'm thinking, um...wait a minute, I don't even know what food is. I don't remember that. So it's kind of like, um... we go through a lot of specific names for different snacks and everything, but then you don't really remember what the general name for food is. (Looks in dictionary) Comida? I guess.

Q (self)
S-level (W)*
Elab/S-level
Resourcing Tr (W)

Int: Yeah.

J: Okay. "Serves food." I'm going to say something "to his friends" or something, um, um...

Summarizing
Plan (PL)

Int: What are you thinking?

J: A su...amigos.

Int: What did you think about to arrive at that?

Tr (PL)

J: Um...well, I...it came, I guess it came pretty easily. I'm just going to... "to his friends" (laughs), because it's pretty much a direct translation on these two, so...

NEXT SENTENCE:
Plan (gen)
Summarizing
Elab (BP)

Int: Did you directly translate it?

J: Yeah. Now I'm thinking if it'll...I'm just going to... I guess I'll just go right into and I'll just say some of the people. [...] I'm trying to think how this'll fit in: He serves food to his friends, um...

S-monitor (STYLE)

Int: What are you thinking?

Plan (SL)

J: I feel like I'm writing a paragraph in English, and I just don't want to all of a sudden "Oh, someone's talking on the phone" because it says he's serving food to his friends, and I'm thinking to say, well, "one of his friends so and so is doing this." I don't know, maybe I'll try that.

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intermediate or advanced level students to work from complete-sentence plans that had been roughly compared to their L2 repertoires (self-evaluation), seemingly because of the impracticality of working on a sentence without being fairly certain they knew enough Spanish to finish it. The more proficient students tended not to be concerned with the limits of their L2 vocabulary; experience with L2 writing had apparently taught them that they could write their way around what they did not know, making it possible to generate and compose a phrase before moving on to planning and composing the next. These phrase groups, as was shown in Exhibit V-7, still assumed a subject-verb-object division.

Some deviations from planning and/or composing in a S-V-O pattern were noted, however. For example, at the start of planning, students were occasionally observed to focus first upon key words in the picture or in a sentence (selective attention). For students at the beginning levels of study, this focus was generally on verbs that could be used to describe the action in the picture, while more advanced students often seemed to zero in on the most problemmatic part of the sentence, building that constituent group before moving onto others. These two types of selective attention are shown below:

Jessica (Spanish 2/1, Fall 1986, writing about "The Party"):
I was just thinking about basically what I was going to write about. I was thinking about the verbs, what they were doing. Bailar, tocar, you know, llamar por teléfono and, I don't know, here I was thinking maybe I'll use usar and then get the word for broom or something, or cleans...

Ben (Spanish 5/1, Fall 86, writing about "Invaders from Mars"):
Now I'm trying to think of a word that you'd use for spaceships... um... so... I'm trying to maybe... cars of the sky or something like that (laughs)... and... and now... I'll say that they're coming from the sky... I can probably just skip around spaceships...

However, once the student had addressed the concerns of whatever he or she was selectively focusing upon (i.e., generated a list of key verbs in the picture), actual construction of the sentences followed the subject-verb-object sequence. Presumably, following the sequence the L2 naturally assumes syntactically is another way to reduce the cognitive burden of planning, translating, and combining the various subparts of sentences. The alternative would be to construct the different parts of the sentence in random order, remember the parts while working on other parts, and then re-order them to adhere to the syntax of the L2 - a definite cognitive challenge!

Other Strategy Findings

One of the predominate characteristics of all the EEs was that they began the task of writing immediately, with no dallying. They took time to look over the picture and see what its major action was, and often took time to evaluate their L2 repertoire in regards to that major action, but they concluded these examinations swiftly and moved at once into planning and composing. Throughout the activity, they maintained their focus; even if they momentarily diverged into a memory of something that had happened in class or something about Spanish itself, they returned of their own accord to the task, taking up writing exactly where they had left off. This ability to direct attention resulted in their efficient execution of the assignment and might be considered a first, critical step in effective writing behavior.

Another predominate characteristic of the EEs, particularly those at the intermediate and upper levels, was that they generated their ideas in a mix of Spanish and English (the more advanced the student, the more generation

in Spanish). Eve and Ben, the advanced students who had lived in Latin America as children showed the greatest facility for generating in Spanish of all the students in this study; they began to speak in Spanish as soon as they understood the assignment, as the two following examples from the Fall 86 writing assignment ("Invaders from Mars") demonstrate.

Eve, after reading the instructions, while looking at the pictures:
Okay, ¿qué pasa aquí? Um, okay ... I'm looking at, trying to figure out what happened. Hay un radio y algo explodes and ... oh, puede ser que, bueno, puede ser que, o sea, la planeta de los Martianos o algo ... se explode, ¿cómo se dice ... (muttering very low, under breath) ... creo que eso ... eso sea bueno. Entonces, lo voy a escribir.

Ben, after looking at the pictures:
Oh, my first sentence, something about, um ... la gente del mundo están muy preocupados porque, um ... el planeto de Mars, el planeto Mars, um ... ha ... ha ... ha exploído ... I'll guess at that, yeah, ha exploído y ... um, I'm thinking of a word for what you'd call inhabitants of Mars, um ... maybe just call them Martians, I think that's perfectly feasible. ... y los Martians, er, ya viene ... ya viene ... a ... al mundo. It's a little weak but ... I'll go with that. (begins to write)

Approaching writing in the L2 by planning in the L2 appears to create a powerful mind set for executing the task. Beginning level students did not have the proficiency to talk to themselves as Eve does above ("Okay, ¿qué pasa aquí?"); their planning in Spanish was limited to examining the pictures and allowing their minds to generate corresponding words in Spanish. There was evidence among the beginning level students, though, that the further they progressed into the composition, the more thoughts began to emerge in Spanish. An example of this is the contrast between the English-driven planning that Sarah engages in at the start of her Spring 87 composition (see the excerpt under "Monitor" in Exhibit V-3) and the spontaneous generation of ideas in Spanish that mark the conclusion of her paragraph about the "Crowded Hotel Lobby."

S: I'm trying to think if I know how to say is "out of gasoline." But... I know how to say gasoline, but I just don't know how to say "out of."

Int: What's occurring to you?

S: A page in the book where there was a picture of a car. And it told you, like, to change, hm, to clean, and... to... I know the words! (frustrated) Oh! Okay. Does not have gas, no tiene gasolina. Tiene came in Spanish, because, like, all of a sudden - have! (writes this) His wife... está muy furiosa... furiosa porque... hm, is it one word? I think it's one word... porque... las niñas desc-

Int: What are you thinking?

S: Trying to say the kids want to go... to the movies.

Int: What are you thinking?

S: If it's dese- if desear is the right verb. Desear ir a las películas.

That Sarah, by the end of her composition, was able to recourse less to English as a means of generating ideas illustrates that "writing is essentially a process of discovery" through which we clarify what we know (Zamel, 1982, p. 195-7). What Sarah is discovering here is that she can use the Spanish she knows without translating from English.

The experiences of having lived and/or travelled in Latin America appear to have given Ben and Eve an advantage over the other students not just for generating ideas in Spanish, but for certain aspects of constructing the compositions as well. When their performances are compared with those of Kathy and Theresa, their upper level peers, two major differences emerged that were not evident between these students in either the reading or listening activities. First, the latter two students, who have had no experiences in travelling abroad or in studying other foreign languages, relied

much more heavily upon deduction as a means of composing and editing their work, while the former two tended to generate their sentences aloud, apparently listening to how the Spanish sounded as a means of determining its correctness (auditory self-monitoring). This can be seen by comparing the deliberateness of Kathy and Theresa's sentence construction in Excerpts #1 and #3 (in Exhibit V-9) to Eve and Ben's much more fluent construction (Excerpts #5 and #7). The second difference noted between these two sets of students is in the size of the constituent group they address while composing. Kathy and Theresa move in small groups, often focusing upon the verb alone or just the preposition, while Eve and Ben tend to generate and address multi-word phrases at a time.

While the ability of Eve and Ben to work in larger constituent groups and to rely less on deduction and more upon their "ear" for Spanish gives a more "native-like" appearance to their L2 writing process, it is not always advantageous to their final products. In Excerpt #6, Eve is so immersed in the generation of her story that the details of Spanish become secondary concerns ("Oh! tenses and stuff, oh dear, oh who cares?"). Given the limited time available in the think alouds, though, it is not known whether she would finish a normal classroom writing assignment by addressing the concerns of the L2's surface structure that she ignored while composing. However, she gives the impression of relying heavily upon her apparent fluency as a means of compensating for a poor grasp of the more "formal" knowledge of rules, knowledge that Kathy and Theresa appear to have at their fingertips and which they use throughout the composing process. Interestingly, a decrease in Kathy and Theresa's reliance upon deduction can be seen between the fall and spring semesters of their Spanish 6 year of

EXHIBIT V - 9
The Four Advanced Level Students:
Use of Deduction and Auditory Self-Monitoring While Composing

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1. Kathy, Spanish 6/1, Fall 86, "Invaders from Mars":
I looked at the next picture...and I figure that they're going to go to the capital and they're gonna demand that we give them...all our water or they're gonna blow up our planet. (Writes, pausing over "mandar") I had to think to make it agree with this, and (whether to) do it in past or present tense, and the person, they "are demanding", so it's got to be present tense. And now I'm going to get into the subjunctive and direct objects which is going to take me a while (laughs).

2. Kathy, Spanish 6/2, Spring 87, "Crowded Hotel Lobby":
Now I have to decide where to go next. I think I'm going to have Spot come along anyway. (Writes "Spot decidió ir...") I want to say "anyway" but I don't know how. (Int: What are you thinking?) Trying to think of a way around it. Just searching my brain for what would be a substitute. (Writes "...sin el permiso de su familia.") (Int: Was that difficult? What occurred to you there?) No, it just came to me.

3. Theresa, Spanish 6/1, Fall 86, "Invaders from Mars":
En el año, um...let's see, um... había, there was... and I'm thinking, no, there is no "n" in habían, on había, because it's a singular, it's always singular. Había, um, I'm thinking of broadcast, you know, a broadcast, um, announcement, um, un anuncio. Now I'm going to elaborate a little bit and put, um, um, del radio. And right now I'm thinking, oh, oh, del radio. Is el radio what you listen to? Or is it the, um... there are two different types of radio. I'm just going to leave it like that cos I don't really know.

4. Theresa, Spanish 6/2, Spring 87, "Crowded Hotel Lobby":
El padre...y el hijo comenzaron...I don't know, that just popped into my head... I had comenzó in my head, then I decided, okay, comenzaron. El padre y el hijo comenzaron a... um, I'm thinking follow, run, should I say follows or runs? Hm, correr. (Int: Why?) Because of running, it's more specific, correr. Now I'm thinking what kind of preposition...correr... now I'm thinking of different ways of saying that they're running after the dog, cos I really don't know what the proper preposition would be.

5. Eva, Spanish 6/1, Fall, 86, "Invaders from Mars":
Okay, la planeta Mars se destruyó y los Martianos ... (writing) I don't know how to spell this, I don't know, Marsi-a-nos (sounding it out in distinct syllables), I'll spell it with an "s." Who knows? Y los Martianos vienen...

6. Eva, Spanish 6/2, Spring 87, "Crowded Hotel Lobby":
Hace muchos, ah, muchos años, the baby looks really small, hace muchos- oh! he can be really sick, and he never grew. Muchos - Oh! tense and stuff, oh dear, oh who cares? Hace muchos años, now I keep thinking about the tenses and getting bothered about that, but anyway... hace muchos años que - oh! oh! this seems to me the subjunctive, que no, que no crecía, okay, I don't know if that's right either, crecía, cre- I'm very bad at tenses. I was thinking what could I say, what ending that was gonna have, what form, but anyway...hm, hace muchos años que no crecía y los- sus padres, sus padres...how, what can these parents feel? Or should I talk about his parents? Okay, hace muchos años que no crecía, okay... so he didn't grow and then what else? Oh! So now he's growing.

7. Ben, Spanish 5/1, Fall 86, "Invaders from Mars":
Ahora...vienen del cielo...y...um, I'm thinking of a neat way to say it, um...todo el mundo está escuchando su radio, um... para saber que está pasando. (Begins to write, speaking aloud as he does so) ...-ando, um, el, I'll say su radio, su radio para saber que está pasando.

8. Ben, Spanish 5/2, Spring 87, "Crowded Hotel Lobby":
El perro...golpea al chico que lleva las maletas y él se cae. I'm figuring out how to spell it. Spelling has never been my strong point. I'll go for the infinitive caer, hm, cayo, cae, ahh...I'm not sure if it's right...but I'll just spell it like that (writes "cae"). (Int: You don't look pleased. What's the matter?) It doesn't seem right, because it sounds like street and street is "calle." Y él se cae.

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study, with a concurrent increase in spontaneous emergence of Spanish and in the size of the constituent group constructed. That the composing processes of these two different sets of students come to resemble each other suggests that, contrary to Krashen's theories of a dichotomy between L2 learning and acquisition (see Krashen, 1982), classroom instruction can be quite effective in developing a learner's abilities and intuitions in the L2.

Summary of Writing Findings

Writing in the L2, at least for these eight exceptionally effective students, appears to follow the same processes used for writing in the native language, namely, planning, translating, and review, the three stages which students engage in recursively (Hayes & Flower, 1980). The eight EEs whose writing processes were examined in this chapter show remarkable similarities in their approach to and execution of writing in Spanish. These similarities are summarized below, indicating that proficient L2 writers:

- Get started on the task immediately. They direct attention throughout the task and do not become distracted by their environment, by their thoughts, or by the writing problems that arise.

- Try to think in Spanish as they work. They generate ideas for writing in Spanish, so that the phrases and sentences they consider emerge in Spanish, with the words they do not know how to say in Spanish (or can not immediately think of) inserted in English.

- Stay within their L2 vocabularies. Rather than generating complicated sentences in English and relying on the dictionary to translate, these writers had an intuitive sense of the limits of their own L2 knowledge.

- Search for alternative ways of expressing ideas. When vocabulary or other problems arose, the EEs did not exhaustively search memory; they immediately substituted other words or phrases, or even ideas, thus showing that flexibility in making and revising plans is at the core of efficient L2 writing.

- Keep generating ideas, rather than bogging down in the problems.

The characteristics listed above relate to general strategies that were pervasive throughout all semesters of student writing and that appear to aid students most in the planning phase of writing. The translating or composing phase of writing was undoubtedly the most trouble-laden, where students were faced with finding L2 words and structures with which to communicate their ideas. To ease the burden of the composing stage and to produce a coherent product, effective L2 writers appear to:

- Structure their compositions so that the topic is clearly stated and drives the subsequent organization. Concern with text structure seems to be transferred from how they write in English.
- Take care that the different sentences of the composition relate to one another, thus producing a cohesive composition rather than a series of disjointed sentences.
- Move in phrase groups, generally "subject-verb-object" in focus.
- Use well known phrases that require little thought.
- Work on one phrase group at a time, often planning the end of the sentence only after finishing writing the beginning.
- Resolve problems through a mix of synactic and semantic knowledge. When use of rules was too difficult or time-consuming, these writers recoursed to their "ear" for Spanish, or substituted semantically similar words or ideas.

Time limitations in the think aloud interviews did not permit students to devote attention to the review stage of writing beyond spontaneous editing as they went along, so it is not known the extent to which these L2 writers would normally examine their compositions for flaws in the flow of their ideas or in the Spanish itself.

Thus, the principle strategies used by these students for writing are:

- planning, which helps to reduce the cognitive burden of writing in the L2, just as it does when writing in the native language;
- self-monitoring, which aids in the composing and review phases of writing, and which is often combined with deduction to polish the written product. More proficient students also appear to use their "ear" or auditory self-monitoring to check their work, judging correctness by how the Spanish sounds;
- deduction, or use of rules, often essential in resolving indecision about the L2; and
- substitution, which is invaluable in permitting the writer to circumvent deficits in L2 knowledge and in moving the writer forward toward task completion.

Elaboration, a key strategy in other activities, was not so predominant in writing, seemingly due to the type of writing task given the students (description of a picture) which did not call for extensive memory searches or concern with audience. However, world elaborations were important in helping students to produce compositions that made sense, while the overall cohesion of the composition was addressed by elaborating between parts. Students clearly applied knowledge of the writing process that they had gained in their native language to the process of writing in Spanish.

CHAPTER VI

Additional Findings of the Longitudinal Study: Russian Students and the Strategy of Problem Identification

An avenue for further investigation into behaviors that discriminate levels of effectiveness in language learning was suggested in Chamot et al. (1988) in the exploratory data analysis category termed problem identification. This category was not systematically applied to the think aloud transcripts because it emerged in the course of data analysis. At various points in the interviews, students would articulate with high levels of clarity specific problem areas in task performance. Such instances were noted in the transcripts of Russian students in particular, and led to the awareness that more and less effective students reacted differently to the act of identifying problems.

This chapter will explore in more depth how the Russian students in this study used problem identification in their language learning work. Data from the Russian students are used (rather than from the Spanish students) because the Russian students were observed to use problem identification more than those studying Spanish. It is not clear why this is, but one possible reason is that the Russian students, enrolled in a competitive university, were perhaps more cognitively mature than the high school Spanish students and, by virtue of experience, more sophisticated learners.

Specifically, three instances of problem identification are analyzed, the first involving an exceptionally effective language learner, the second, an effective

language learner, and the third, an ineffective language learner. In each case, the student has overtly indicated a discrete, semantic problem associated with the language task underway. The students differed, however, in their approaches to proceeding toward task completion, given the identified obstacle.

Example 1

Student: First year, exceptionally effective student, enrolled in an intensive Russian course, Spring semester.

Task: To listen to a taped monologue discussing the Pushkin Language Institute and answer specific comprehension questions based on the passage. The student took the opportunity to familiarize himself with the comprehension questions prior to listening to the tape.

Problem: The third comprehension question asks, "What is the curriculum?" The passage provides an answer to this question by naming the various subjects covered in the Institute program. The student understands and reports all of these subject areas except one, "fonetiku" (phonetics). He recognizes that the sound string "fonetiku" is a subject area that should be included in the answer to the question.

Note: The punctuation "//" indicates that the student is talking at the same time that the tape is playing.

(The tape is playing for the first time.)
Tape: ... Kakie predmety izuchayut studenty? (What subjects do the students study?)//
St: // What subjects //
Tape: // Istoriya (history) //
St: // WOW? //
Tape: // Zanyatiya provodyatsya kazhdyj den' ... (Classes are conducted every day ...)//
St: // You know, I thought they just said "vo Mexico!" (in Mexico)

(Discussion after first listening. Student is answering questions.)
St: What is the curriculum? There's all the russij (Russian), geografie (geography), literatura (literature), yazyk (language), and stuff like that. The first one, I thought, what did it say? I thought maybe it said, "vo Mexico" (in Mexico). I'm not sure what it said. I missed it. I was talking, I was thinking. Wasn't even thinking about that, to be honest with you, but ...

(Tape is replayed at student's request.)
Tape: ... fonetiku, grammatiku (phonetics, grammar) ... //
St: (stopping tape) Can I just hear that one little line again? (rewinds tape a bit) Thanks.
Int: Sure. What are you thinking?
St: I'm just think... it sounds like "vo Mexico" (in Mexico).
Tape: ... fonetiku.
St: (stops tape) I just have no idea what it is. (rewinds tape a bit)
Tape: ... fonetiku. //
St: // I just get //
Tape: // Zanyatiya provodyatcya kazhdyj den' krome voskresen'ya (Classes are conducted every day except Sunday) //
St: Oh, every day except Sunday, I can't believe I missed it, but...
(Tape ends).

Int: Okay, moving on //
St: // What is that?
Int: Fonetiku, fonetika.
St: Foneti //
Int: Phonetics and grammar.
St: I just couldn't get that. I, I... fone-, I just couldn't get that.

This first example demonstrates a manifestation of the use of problem identification in the course of processing a language task. The student, overall, has no trouble comprehending the taped passage, as evidenced by his ability to summarize the content while simultaneously listening to new information, and by his accuracy and detail in responding to the comprehension question. Nonetheless, he is fully aware that a gap exists in his response to the third question (self-monitoring), specifically, that the passage was indicating a subject with the sound string "fonetiku" which he heard as "vo Mexico" (self-monitoring of comprehension), and that his auditory representation of that sound string could not be correct. To the extent that time permitted, the student persists in attempting to correct his understanding (selective attention), returning numerous times to the problem (repetition). As soon as the interviewer moves towards closure for the task, the student question the interviewer for clarification.

Example 2

Student: First year, effective student, enrolled in an intensive Russian course, Spring semester.

Task: To formulate a grammatically correct, logical sentence from a given string of grammatically unanalyzed words and phrases. This task was designed to challenge second year students, so this student is working at one level above herself.

Problem: The student does not recognize the typographical error "gotoryj", erroneously printed in place of "kotoryj" (which).

(The student is working through the task.)

St: ... okay, but I still don't know what this is, this right in here, I still don't know, I still don't know what that means, so I don't know what to do with it ... but I would say, just a best guess here, Boris perepicybaetcya s etimi devushkimi, ushkami, gotorykh prinyat' //

Int: // That's kotoryj.

St: Oh, kotoryj ! Oh, that makes ...

Int: Sorry, there are typos. I was looking ... I didn't even see what was wrong with it.

St: Oh, that helps. That helps the sentence a lot.

In this case, the student again clearly identifies a source of difficulty threatening her successful completion of the task. She does not recognize the word (self-monitoring of comprehension) and, therefore, is not quite sure what to do with it. In contrast to the student in the first example, however, she does not dwell on the problem but, rather, correctly infers that it is logically related to the preceding noun, devushki (girls), and deduces an appropriate case ending for it (-ikh, a plural possessive or accusative ending).

Example 3

Student: First year, ineffective student, enrolled in a non-intensive Russian course, Spring semester.

Task: To formulate a grammatically correct, logical sentence from a given string of grammatically unanalyzed words and phrases. This task was designed to challenge first year students.

Problem: The student does not recognize the word "derevnya" (village). Note that the problem can be successfully completed without comprehending this particular word.

(Student is working on the sentence)

St: Ah, oh, same thing Vy znaet devushka rabotaet derenya. Okay... Vy znat', vy znaet devushka, cut it, you know... girl who works... um, derevnya. I know that word, just think from where, derevnya, derevnya... derevnya... na derevnya... derevnya, derevnya. Um. Can't think of the way that works. Um. Comes in here, too, rabotat' devushka, snimat', Vy znaete devushka rabot-. Okay, do you know the girl who works... however, what is derevnya, derevnya, derevnya- Recognize that word. Derevnye... derevnya. Um... can't think of it right now from, um...

Int: Where are you looking for it?

St: ...I mean, I can't really see anything, I just, I remember hearing it and I can't really think from where, and I can't, I can't place it. But it's... um, that's real bothersome. Uh... uh, I don't recognize anything as an English equivalent, or anything, or, or I don't get a picture of what it should be. Just, I mean, devushka gets it right away.

Int: You mean, uh //

St: DevUshka, it's devUshka, isn't it? It's not grandfather, it's girl... I'm thinking dedushka, de- du--, okay, so Vy znaet, vy znaete devushka... vy znaete... we're going to need something here. Vy znaete... devushku, kotoraya rabotaet... derevnye, derevnye... chto- to derevnye?... derevnye, derevnye, Vy znaete devushka kotoryj rabotaet, kotoraya, devushku kotoraya... rabotaet... hm... derevnya, ne znaete...

Int: What if give you a hint, that it's a place?

St: Derevnya, derevnya (flips a page). St-, sto-, store or something? Derevnya... (long pause)... I think I... nah-h-... sounds like a grocery store, but I don't think it's... that's two words... too long for that... although it might be on that same sheet of paper somewhere, which is the one I'm picturing now... Uh-m... derevnychto derevny? No. Vy znaete devushka kotoraya rabotaet... Hm.

Int: Village.
St: Hmmmm, now I can see the picture, yeah. There's a picture of this village and in front of there's a reka and behind it, there's a les. And there's a river and behind it is the woods... Na derevnye Oh-h-h. Was in the book.

This example demonstrates what might be considered unsuccessful, or inappropriate, preoccupation with problem identification. To solve the task, the student needed only to supply the preposition "in" (v) and put the noun into the locative case, which for virtually all singular nouns is "-e." Nonetheless, the student, realizing his inability to translate the word, becomes unable to attend to the task demands, namely, grammatical analysis of the words. Rather, the student gets caught up in attempts to use imagery and repetition to retrieve the meaning of the word at the expense of generating any acceptable response to the task.

In each of the instances reported above, the student clearly reports a word-recognition problem that inhibits his/her ability to complete the task successfully. However, the students react somewhat differently to their problem identifications. The exceptionally effective student (in Example 1) and the effective student (in Example 2) are both able to suspend resolution of the problem and continue with the global task at hand, whereas the ineffective student (in Example 3) is immobilized by his problem. The first and second students weigh the importance of their problems as relative to task completion. In the first case, the student persists in trying to solve the problem, but also attends to processing surrounding language in order to respond to the task demands. When availed of the opportunity, he uses the interviewer as a resource to satisfy his curiosity. The second student,

working with a different type of language task, simply uses the strategies of inferencing and deduction to circumvent her identified "problem" and, based on her performance on other tasks, would probably have continued to do so, had the interviewer not intervened. The third student becomes so preoccupied with the unknown, and so concerned with resolving it through the ultimately unproductive retrieval strategies of repetition and imagery that he fails to recognize the solution offered by the interviewer (to bypass the problem with grammatical information). Equally, the third student fails to draw upon alternative problem resolution strategies, such as resourcing or questioning for clarification.

Discrete problems, such as those described above, do offer insight into language processing differences among learners of varying levels of effectiveness, but they fail to indicate other, more global manifestations of problem identification behaviors. In the Russian student interviews, two remarkable instances of retroactive problem identification were evidenced with exceptionally effective students. One, unfortunately, occurred under circumstances of tape-recorder failure; thus, no documentation exists for in-depth analysis. Nonetheless, the incident is worthy of second-hand report by the interviewer. A third-year, intensive, exceptionally effective student was working through a reading comprehension task targeted for students beyond the fourth year level. The passage discussed a new sewing machine (Shvenaya mashina). The (male) student misinterpreted the meaning of "shvenaya" as Swiss (transfer, based on the student's knowledge of several Germanic languages). In Russian, "mashina" refers to cars as well as other types of heavy machinery. Thus, he was interpreting the passage as one describing a new Swiss automobile rather than a new sewing machine.

With astounding creativity, he generated a logically acceptable summary of the various features of some imaginary automobile until the passage simply made no sense to him. At that point, he began to identify selected unknown words and to check the dictionary for meanings (resourcing). After looking up two or three words that did not substantially help him, the student decided to confirm the meaning of "shvenaya", whereupon he totally shifted his schema for processing the text, which led to an entirely accurate rendering of its meaning. In other words, this student was able to identify probable faults in the schema he had created to make sense of the passage, and to accomodate the effect of major schema alteration without beginning the task anew, by discovering the "missing piece of the puzzle."

In a similar, though less dramatic way, the example given below shows how discovering a critical piece of information influences an exceptionally effective student to reprocess information in the second language in a new and more accurate manner.

Example 4

Student:	First year, exceptionally effective student, enrolled in an intensive Russian course, Spring semester.
Task:	To listen to a taped dialogue entitled "Eva meets Klaus's friends." The dialogue involves a number of speakers who introduce themselves in subtle ways throughout the course of the passage. The student must also answer inference-based questions on the passage. The student took the opportunity to familiarize himself with the comprehension questions prior to listening to the tape.
Problem:	The student must answer two rather demanding questions: "How many speakers participate in the conversation?" and "Who is Eva? Where does she work?"

(Discussion following second listening to tape.)

St: And then they were talking about Mama, Mama-- I don't even know whose Mama it was. It must have been Ula and, what's his name, Paul's Mama. I don't know.

Int: Okay. It's not that important. Eva is Mama and that's Klaus' Mama.

St: Okay! Ev- is Mama! Oh-h-h. See. I would have known something if I had known that. Maybe I was trying to... I knew about Mama just because they started talking about her at the end and she works at the best school in the city, whatever. And I just figured that couldn't be Eva. I don't know. Eva is Mama. Oh, gosh!

Again, evidence suggests that this student was able to entirely shift his schema for processing an integrative text, based on the availability of critical pieces of information. As soon as he discovers such critical information fragments, he knows the flaw in his schema and how to correct it. No such behaviors were evidenced in the interviews of less effective language learners.

Further investigation of the problem identification behaviors of language learners, and more importantly, their reactions to the fact of problem identification may contribute to an overall understanding of differences in language learning skills that may be susceptable to change through language learning instruction.

CHAPTER VII

The Course Development Study

Introduction and Focus

Research on learning strategies in foreign and second language acquisition has focused mainly on the identification, description, and classification of learning strategies used by second language learners. One of the principal concerns in this research, including the foreign language descriptive and longitudinal studies conducted as part of the current project (Chamot et al., 1987; 1988), has been the description of strategies used by more effective language learners. Having identified strategies used by good language learners and seen how they differ from the strategy use of less effective learners, the questions arise of whether less effective learners can learn to use strategies to assist their learning and, if so, what strategies can and should be taught, and what instructional approach can be used to teach the strategies selected.

Considerable research on training learning strategies has been conducted outside the second language field in various areas of the curriculum, including reading comprehension, memory training (e.g., recall of vocabulary, facts, definitions), and problem solving. Noticeably absent from learning strategy training research in first language contexts is training in oral language production (Derry & Murphy, 1986). Training students to develop strategies for writing has been found to be the most effective instructional appproach to improving composition in first language contexts (Hillocks, 1987). Oral language

production skills are particularly important in second language learning contexts, where students' acquisition of communicative competence is crucial to their success in academic settings. Although the smaller number of second language acquisition training studies includes memory training, and listening and reading comprehension, very few studies have examined how strategies for oral productive language can be trained.

This review of the learning strategy training literature first discusses some of the major issues that need to be addressed in training learning strategies, and then describes representative training studies conducted with second language learners and with learners in first language settings which may have applications to second language learning.

Issues in Training

Separate vs. Integrated Training

An unresolved issue in learning strategy training is whether training should focus only on learning strategy instruction or should be integrated with classroom instruction in the language or content subject. Arguments in favor of separate training programs indicate that the strategies are generalizable to many contexts (Derry & Murphy, 1986; Jones, Palincsar, Ogle, & Carr, 1987), and that students will learn strategies better if they can focus all their attention on developing strategic processing skills rather than trying to learn content at the same time (Jones et al., 1987). Examples of separate strategy training are Dansereau's (1983) computer assisted cooperative learning (CACL) program designed to train pairs of students to use a sequence of

reading comprehension strategies which are presented and practiced by computer, and his learning strategy system (identified by its acronym MURDER) which trains primary strategies for comprehension/retention and for retrieval/utilization, and support strategies for planning, monitoring, and concentration management (Dansereau, 1985).

Those advocating integrated strategy training programs, however, state that learning in context is more effective than learning separate skills whose immediate applicability may not be evident to the learner (Wenden, 1987) and that practicing strategies on authentic academic and language tasks facilitates the transfer of strategies tc similar tasks encountered in other classes (Campione & Armbruster, 1985; Chamot & O'Malley, 1987). Dansereau (1985), finding that students encountered difficulty in adapting the strategies they had learned in the MURDER learning strategy system to particular kinds of text materials, developed a strategy training program in which the strategies were designed for specific types of science texts. Instruction in developing an organizational schema for science theories and using headings to facilitate comprehension of scientific text were both effective aids for college students' recall of material read in science textbooks.

Dansereau (1985) suggests that future studies evaluate a learning strategy system that integrates both content-independent strategies and content-dependent ones. This type of integration is also suggested by Derry's (1984) incidental learning model, in which students receive short periods of separate strategy training followed by reminders to use the strategies in content

classrooms. Weinstein (1982) and her coworkers (Weinstein & Underwood, 1983) have developed and implemented both separate and integrated learning strategy training. The separate training consists of a special university course designed to teach students how to use learning strategies effectively. Practice is provided on the application of these strategies to students' other courses. The integrated training consists of teaching high school teachers how to incorporate learning strategy instruction into their regular classrooms.

Direct vs. Embedded Training

The arguments for separate and integrated learning strategy training programs are similar to the question of whether the actual training (whether separate or integrated) should be direct or embedded. In direct training, students are informed of the value and purpose of strategy training, whereas in embedded training, students are not informed of the reasons why this approach to learning is being practiced, but are merely are presented with activities and materials structured to elicit the use of the strategies being taught. Early research on training learning strategies following the embedded approach found little transfer of training to new tasks (Brown, Armbruster, & Baker, 1986). More recent studies have added a metacognitive component to training by informing students about the purpose and importance of the strategies to be trained and providing instruction on the regulation and monitoring of strategies. The addition of this metacognitive component has been helpful in maintaining strategy use over time and in transferring strategies

to new tasks (Brown, Armbruster, & Baker, 1986; Palincsar & Brown, 1985).

On the other hand, an advantage for strategy training embedded in the instructional materials is that little teacher training is required (Jones, 1983). As students work on exercises and activities, they learn to use the strategies that are cued by the textbook. An example of uninformed strategy training in a second language context is Barnett's (1988) study of college students of French. The purpose of the study was to see if reading strategy instruction in the first year of French would result in higher reading achievement at the end of the first semester of second year French. Beginning level students in the experimental groups were provided with special reading comprehension exercises designed to teach students to recognize cognates, make inferences to guess at meanings, use titles and illustrations, and make predictions about the text. However, students were not told the rationale or intent of this strategy instruction because the researchers wanted to "avoid as much as possible the impact of enthusiasm sometimes generated by an experimental situation " (p. 111). Experimental group students showed somewhat greater improvement in reading comprehension than did control group students, but the differences were not statistically significant. A criticism of uninformed strategy training of this type is that students who are not aware of the strategies they are using do not develop independent learning strategies and have little opportunity of becoming autonomous learners (Wenden, 1987).

Many researchers, therefore, recommend that learning strategy

training be direct rather than embedded (Brown, Armbruster, & Baker, 1986; Palincsar & Brown, 1982; Wenden, 1987; Weinstein & Mayer, 1986; Winograd & Hare, 1988), or that direct instruction be added to a curriculum or instructional materials designed with embedded strategies (Derry & Murphy, 1986).

Training Implementation

The actual implementation of learning strategy training raises a number of issues. Probably the most important is developing in teachers the understanding and techniques for delivering effective learning strategy instruction to students. A second and related issue is the development and adaptation of instructional materials that provide learning strategy instruction, either as a supplement to the basal second language textbooks, or as an integrated system included in these textbooks. Third, the specific scope, sequence, and methods of training activities to meet the needs of particular students need to be considered. Finally, student characteristics, especially attitude and motivation, need to be considered in developing training activities.

Teacher Training. Very little attention has been given to training in which teachers are familiarized with techniques for learning strategy instruction. Virtually all learning strategy training in both first and second language contexts has been conducted by researchers. In their comprehensive review of systems developed to train learning ability, Derry and Murphy (1986) discuss a number of strategy training studies conducted in four learning domains - memory training, reading strategies

training, problem solving training, and affective support training. In each domain issues such as instructional materials, curriculum, and training procedures are described, but no mention is made of how teachers have been or can be trained to teach learning strategies to their students. Yet there is a need not only to train teachers in methods of incorporating strategy instruction in their classrooms, but also to convince teachers that learning strategies can be effective for their students (Wilson, 1988). One pilot study to train teachers to use a learning strategy curriculum in high schools and community colleges was conducted by Weinstein and Underwood (1983), who reported student performance gains six months after the conclusion of the teacher training sessions.

In the second language field, the role of teacher training is equally unclear. Holec (1987), for example, reported a series of investigations in which students who elected to self-direct their own language learning worked with a teacher who "functions as counsellor in the context of individual non-directive interviews (p. 147)." How the teacher learns to function as a counsellor is not mentioned. In other second language training studies, researchers and their associates work directly with students, with teachers involved mainly as observers (e.g., Cohen & Aphek, 1980; Hosenfeld, Arnold, Kirchofer, Laciura, & Wilson, 1981; O'Malley et al., 1985a). O'Malley and Chamot (forthcoming) report that teachers need considerable exposure to the concept of learning strategies as opposed to teaching strategies and repeated practice in designing and providing learning strategy

instruction before they feel comfortable with incorporating strategy training in their classrooms.

A recent synthesis of research on staff development over the last 30 years has identified the features of training design which have the greatest effect in terms of teachers incorporating new concepts and skills into their classrooms (Showers, Joyce, & Bennet, 1987). This synthesis found that effective training includes both presentation of theory and demonstration of the new approach, followed by immediate practice and feedback in the training setting. Development of a basic level of knowledge and skills with the new approach is a necessary though time-consuming requirement for successful training. In addition, this synthesis found that teachers are more likely to use the new approach in their own classrooms if they receive coaching, or peer feedback, during their implementation efforts. A staff development model that provides for ongoing training, practice, and feedback is the coaching model developed by Joyce and Showers (1988). In this model, teachers participate in training activities which extend over one or more school years and include monthly workshops and collaborative planning and classroom observation with another teacher.

This type of intensive and ongoing staff development may be essential in developing what Jones and her colleagues (Jones et al., 1987) have termed a "strategic teacher." In their view, a strategic teacher first spends considerable time thinking and making decisions about the variables of the instructional process, content to be learned, assessment, and development of strategy instruction, then draws on an extensive knowledge base

in both the content of the curriculum and teaching and learning strategies to develop lessons, and finally engages in interactive instruction in which he or she models learning processes and mediates instruction by helping students organize and interpret what they are learning. Because the focus is on the learner and the learning process rather than on the teacher as information provider, this model is quite different from more familiar ones, and can be expected to require a considerable investment in teacher training. Ogle (1988) reports on a three year approach to staff development on the strategic teaching model which has many elements of the coaching model. In the first year, inservice workshops on strategic teaching principles and practice were provided by expert consultants to participating teachers. In the second year, the consultants demonstrated the concepts developed in the first year by teaching lessons in the teachers' classrooms. By the third year, teachers were working collaboratively to develop, implement, and demonstrate to each other lessons designed on the strategic teaching model. In spite of the extended time allocated to these staff development activities, teachers still encountered difficulty in some of the techniques they were learning, notably in analyzing and evaluating students' prior knowledge of the lesson topic.

Materials Development. A number of instructional materials have been developed for strategy training for native English speaking students, including, for example, the Chicago Mastery Learning Reading Program with Learning Strategies (Jones, 1983; Jones et al., 1985), the Job Skills Educational Program developed

for the Army (Derry, 1984; Murphy & Derry, 1984), and the Computer Assisted Cooperative Learning program (Dansereau, 1983).

There are few readily available materials to teach learning strategies in the second language classroom. This increases the demand on potential "strategic" teachers to incorporate learning strategy instruction into their classrooms because they must develop materials as well as carry out the instructional techniques that will familiarize their students with learning strategy applications.

Whether teachers use existing learning strategy instructional materials or develop their own teacher-made ones, planning the scope and sequence for learning strategy instruction is an essential task. Since the goal of learning strategy training is to make students autonomous, self-reliant learners, learning strategy activities need to be designed not only to teach strategies, but also to provide for practice and the eventual assumption of responsibility for strategy selection and use by the student.

Similar procedures for planning the scope and sequence of strategy training activities have been suggested by a number of researchers. Initially, the teacher identifies and assesses the strategies students are already using, then explains the strategy and provides opportunities to practice it (Hosenfeld et al., 1981; Jones et al., 1987; O'Malley & Chamot, forthcoming; Weinstein & Underwood, 1985). Exhibit VII-1 summarizes several suggested learning strategy instructional sequences. The Jones et al. (1987) sequence is a component of their strategic teaching model, and is intended for use in all content areas in mainstream

Exhibit VII-1

Scope and Sequence Frameworks for Learning Strategy Instruction

First Language Contexts

Jones et al. (1987)
General Guidelines (all subjects)

1. Assess strategy use with
   - Think-aloud
   - Interviews
   - Questionnaire

2. Explain strategy by
   - Naming it
   - Telling how to use it, step by step

3. Model strategy by
   - Demonstrating it
   - Verbalizing own thought processes while doing task

4. Scaffold instruction by
   - providing support while students practice
   - Adjusting support to student needs
   - Phasing out support to encourage autonomous strategy use

5. Develop motivation by
   - Providing successful experiences
   - Relating strategy use to improved performance

Second Language Contexts

O'Malley & Chamot (1988)
General Guidelines
(Content-Based ESL)

1. Preparation: Develop student awareness of different strategies through
   - Small group retrospective interviews about school tasks
   - Modeling think-aloud, then having students think aloud in small groups
   - Discussion of interviews and think-alouds.

2. Presentation: Develop student knowledge about strategies by
   - Providing rationale for strategy use
   - Describing and naming strategy
   - Modeling strategy

3. Practice: Develop student skill in using strategies for academic learning through
   - Cooperative learning tasks
   - Think-alouds while problem-solving
   - Peer-tutoring in academic tasks
   - Group discussions

4. Evaluation: Develop student ability to evaluate own strategy use through
   - Writing strategies used immediately after task
   - Discussing strategy use in class
   - Keeping dialogue journals (with teacher) on strategy use

5. Expansion: Develop transfer of strategies to new tasks by
   - Discussions on metacognitive and motivational aspects of strategy use
   - Additional practice on similar academic tasks
   - Assignments to use learning strategies on tasks related to cultural background of students

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Exhibit VII-1 (continued)

Scope and Sequence Frameworks for Learning Strategy Instruction

First Language Contexts

Weinstein & Underwood (1985)
College Course
(Individual Learning Skills)

1. Identify academic and strategy needs through
   - Learning and Study Skills Inventory (LASSI)
   - Other self-report measures
   - Reading comprehension test
   - Individual interviews
   - Group discussions

2. Develop goals for strategy use and affective control for
   - Individuals
   - Entire class

3. Provide background information on
   - Motivation
   - Cognition
   - Strategies and study skills
   - Transfer

4. Provide different practice opportunities with varied content:
   - Discussion
   - Role-playing
   - Peer tutoring

5. Evaluate strategy acquisition by
   - Providing both individual and group feedback
   - Administering same instruments as in Step 1
   - Developing self-evaluation with student journals and papers

Second Language Contexts

Hosenfeld et al. (1981)
Reading Comprehension (French)

1. Provide think-aloud training

2. Identify current reading strategies

3. Explain importance of strategies

4. Help students analyze own strategies in L1 (English)

5. Have students practice L1 strategies in L2 (French)

6. Provide direct instruction on reading comprehension strategies by
   - Explanation
   - Practice
   - Application to reading assignments
   - Evaluation of success of strategies

7. Evaluate success of strategy training by repeating Step 2.

Drawn from O'Malley & Chamot (forthcoming).

classrooms. The Weinstein and Underwood (1985) sequence was developed for a university course designed for students who need or wish to improve their academic learning skills. The ESL sequence (O'Malley & Chamot, forthcoming) was developed as part of a content based elementary and secondary ESL program. The Hosenfeld et al. (1981) sequence was designed to improve the reading comprehension skills of high school students of French as a foreign language.

All four sequences share a basic structure in which the teacher first identifies or shows students how to identify their current learning strategies, explains the rationale and applications for using additional learning strategies, provides opportunities and materials for practice, and evaluates or assists students to evaluate their degree of success with the new learning strategies. In other words, all are examples of direct rather than embedded training.

Student Characteristics

The importance of student characteristics on learning strategy training is critical. Characteristics such as age, sex, attitude and motivation, prior education and effectiveness as a learner, learning style, and cultural background play an important role in the receptiveness of students to learning strategy training and their ability to acquire new learning strategies. O'Malley and his coworkers (1985b) found, for example, that acceptance of new strategies during training was related to prior success with alternative strategies, and this was related to prior educational background (or ethnicity).

Motivation is probably the most important characteristic that students bring to a learning task. Motivation, or the will to learn, can be considered a component of metacognition insofar as it plays a self-regulatory role in learning (Jones et al., 1987). Students who have experienced success in learning have developed confidence in their own ability to learn, and are therefore likely to approach new learning tasks with more positive motivation than previously unsuccessful students who may have developed a negative attitude towards their own ability to learn. Learning strategy instruction can be especially valuable for students who are not successful learners, yet these students may be the least motivated to try new strategies, since they may not have confidence that they are actually able to learn successfully (although, as mentioned in Chapter III, we discovered that some less effective students are nevertheless highly motivated). In the case of second language learners, some students may indicate that they are "not good at languages" or do not "have an ear for languages," and therefore may not consider it worthwhile to make an effort to improve their own language learning. Strategy training programs need a motivation component to help get reluctant students over the initial hurdle of learning to use new strategies. Once students begin to experience some success in using strategies, their confidence about their own level of confidence increases along with their motivation to complete the task successfully. Jones et al. (1987) indicate that a major objective of strategy training should be to change students' attitudes about their own abilities by "teaching them that their failures can be attributed to the lack of

effective strategies rather than to the lack of ability or to laziness " (p. 56).

Paris (1988) states that informed training in the use of strategies is not sufficient, but that a motivational training component needs to be added to learning strategy instructional programs. He identifies the following four instructional techniques which can facilitate the integration of motivational and cognitive strategy instruction:

- o Modeling, in which the expert (the teacher) demonstrates to the novice (the student) how to use the strategy, often by thinking aloud about the goals and mental processes involved;
- o Direct Explanation, in which the teacher provides a persuasive rationale and benefits expected from use of strategies, so that students become convinced of their own potential success;
- o Scaffolding Instruction, in which the teacher provides temporary support to students as they try out the new strategies (e.g., as in Reciprocal Teaching, described in the next section); and
- o Cooperative learning, in which heterogeneous student teams work together to solve a problem or complete a task.

These instructional techniques can be combined, and have considerable potential for use with foreign language learners.

In second language learning, the importance of attitude and motivation is illustrated in Wenden's (1987) account of the strategy training she conducted at the American Language Program at Columbia University. ESL students in this intensive program were given, in addition to the regular ESL course, instruction and practice on the nature of language learning in order to develop metacognitive awareness. A questionnaire to evaluate the learner training component was administered at the end of the

course, and the responses indicated that for the most part, students did not perceive any value in the learner training. Wenden attributes these negative results to the fact that the learner training was not closely linked to the language learning objectives of the course, so students did not clearly understand why and how the use of metacognitive strategies could improve their English.

Other student characteristics which should be considered in designing learning strategy training for foreing language learners are age, sex, prior foreign language experiences, cultural background, and learning style.

Representative Studies

This section describes a sample of studies conducted on learning strategy training in second and foreign language contexts, and in first language contexts which have applications to the foreign language classroom. Most of the monolingual studies have been experimental in nature, with objective measures of learning outcmes, and were often conducted outside of the regular classroom in individual student-researcher settings. In contrast, most of the second language studies have been non-experimental, include data based on measures such as interviews, questionnaires, and teacher comments, and have been conducted in classroom settings.

Training Learning Strategies for Second Language Acquisition

Memory training in foreign language learning has focused on mnemonic techniques that facilitate vocabulary learning (Thompson, 1987). Training procedures which have used paired

associate techniques include the peg word method, in which second language learners use a list of memorized cue words to learn vocabulary or grammatical categories in the second language (Paivio & Desrochers, 1979), and the keyword method, in which students learn sets of words through the combination of an auditory and imagery link (Atkinson & Raugh, 1975; Pressley, Levin, & Delaney, 1982). In reviewing the various mnemonic techniques for memory training, Thompson (1987) identifies a number of constraints that can limit the usefulness of these techniques for strategy training, including the additional effort required to learn the associated relationships, the lack of meaningful relationships between the items to be learned, potential difficulties with pronunciation, individual differences such as age, prior educational experiences and cultural background, learning style predilections, task difficulty, and proficiency level of students.

Cohen and Aphek (1980) trained students of Hebrew to recall new vocabulary words through paired associations. First, students were given brief instructions on how to use associations to assist in vocabulary recall, then they selected their own new words from a reading text and made their own associations for them. The students practiced using the new words in a variety of cloze activities over a period of several weeks. At the time of the post-test, students most often used the initial association they had made in order to recall the new word, and this led to better performance than using a different association or none at all.

Training studies on comprehension strategies in foreign language learning have investigated reading comprehension more frequently than listening comprehension. Hosenfeld and her associates (1981) taught a series of reading strategies to high school French students following the curricular sequence described in Exhibit VII-1. As Wenden (1987) points out, this is an example of informed or direct training, because students were told about the nature and value of the strategies taught, and had to determine the relative personal usefulness of the strategies. However, information about the effectiveness of the strategies taught for improving reading comprehension or even the gain of strategy use from pre-test (Step 2) to post-test (Step 7) is not provided.

A number of foreign language learning strategy studies have been undertaken in France and elsewhere under the auspices of CRAPEL (Centre de Recherches et d'Application Pedagogiques en Langues at the University of Nancy, France). These studies have been guided by an approach in which foreign language learners are provided with an option for self-directed rather than traditional classroom courses (Holec, 1987). These studies sought to describe the improvement of comprehension skills (listening and reading) and oral production skills. The basic procedure is that students choosing the self-directed learning option meet with a counselor on an on-going basis to decide upon course objectives, discuss learning techniques, and select instructional materials. A striking feature of the CRAPEL model is the degree of autonomy provided to the learner, unusual in a formal educational setting such as a university. Learners in the CRAPEL model decide what

to learn, how they will learn it (with suggestions from the helper, who is carefully not cast in the role of teacher), and what materials they will use. Adult students, both beginning as well as more advanced second language learners, have been successful in this type of learning environment. Success with autonomous learning on the CRAPEL model was reported through evaluations conducted by means of informal summaries by researchers, interviews with students and questionnaires (Holec, 1987; Moulden, 1978; 1980; Wenden, 1987).

A training project conducted at a Eurocentre language training institute in England focused on oral production skills. Wenden (1987) indicates that the objectives of this project were the development of students' ability to assess their own oral language through activities such as using a checklist to evaluate their own taped language samples. Teachers reported that students were successful in learning to use the criteria for self-evaluation and enjoyed the activities.

O'Malley, Chamot, Stewner-Manzanares, Russo, & Kupper (1985b) conducted a study to determine whether strategy training of ESL students in a natural classroom setting would result in improved learning for different types of second language tasks.

Intermediate level high school ESL students were randomly assigned to one of three groups that were differentiated by the combination of strategy instruction or no instruction received. In the metacognitive group students received combined training on metacognitive, cognitive, and social-affective strategies; the cognitive group received training on cognitive and social-

affective strategies alone; and the control group was asked to work on the language learning tasks using whatever procedures they typically used in performing classroom assignments. In each group student ethnicity was about a third Hispanic, a third Asian, and the remainder from other ethnic backgrounds. Training was conducted by the researchers over a two week period. Experimental students were provided with explicit directions for using strategies for listening comprehension, developing and presenting an oral report, and vocabulary learning. The same learning strategies were always presented with each language task although the materials varied on each occasion that the task was presented, so that students could practice strategy applications with new materials. Explicit directions and cues for strategy use were gradually faded until by the posttest only a reminder was given to use the same strategies they had used before.

Exhibit VII-2 illustrates the way in which strategies were combined with the different language tasks for the metacognitive group and shows the strategies taught for vocabulary, listening comprehension, and oral presentations. The cognitive group received the same cognitive strategy training but none of the metacognitive strategies, and the control group received no strategy instruction.

Differences among the three groups on the speaking task were statistically significant on the posttest adjusted for initial differences at the pretest. The metacognitive group scored higher than the cognitive group, which in turn scored higher than the control group.

Exhibit VII-2

ESL Training Study

Language Activities and Accompanying

Learning Strategies for the Metacognitive Group

Language Task	Strategy Type	Strategy
Vocabulary (word lists)	Metacognitive Cognitive Social-affective	Self-evaluation Imagery & Grouping none
Listening (5-minute lecture on an academic topic)	Metacognitive Cognitive Social-affective	Selective attention Note taking Cooperation
Speaking (2-minute presentation on a familiar topic)	Metacognitive Cognitive Social-affective	Functional planning None Cooperation

(O'Malley & Chamot, forthcoming)

Although differences between groups on the listening task were not significant at the posttest, some of the daily tests were significant. Tasks on which significance was found were the human interest topics, which were less demanding, whereas significance was not found on the more demanidng school-related topics. Reasons why significance was not found on the listening task at the posttest could have been due to the difficulty level of the posttest, the lower interest level of the materials, or the possibility that cues for strategy use were faded too quickly.

The vocabulary test showed no significant differences overall among the treatment groups. However, when results were examined by ethnic group, it was discovered that the Asian control group outperformed the Asian training groups, while the Hispanic training groups outperformed the Hispanic control groups. This effectively nullified the overall findings. Reflecting on these results, the researchers providing the training indicated that the Asian students had resisted using the strategies during training and had preferred to use rote-repetition, which is what the control group used, while the Hispanic students had been more interested in alternatives to the usual processes they used to learn.

This study successfully demonstrated that strategy training can be effective in a natural classroom environment with integrative language tasks such as speaking and listening, although it suggested that the training effectiveness depends upon the difficulty of the materials or the rate at which cues for strategy use are faded over time.

Training Learning Strategies in First Language Contexts

While second language learning strategy training studies have been relatively few in number, such is not the case in first language settings, where a variety of training studies have been conducted in the last fifteen years (see Derry & Murphy, 1986 for a comprehensive review of learning strategy training studies). In this section a representative sample of these training studies which appear to have the greatest potential for applications to the foreign language classroom, particularly for the development of integrative language skills (e.g., listening and reading comprehension and oral and written production) is discussed.

A number of studies have sought to improve students' reading comprehension through training in the use of elaboration, or meaningful association of new information with prior knowledge. The ability to use elaboration successfully allows a reader to construct meaning by making direct connections between the written text and individual schemas, or knowledge frameworks. These schemas can consist of general or academic knowledge about the topic and of knowledge about the organization of the type of discourse being read, such as knowledge about specific story grammars. Expert readers' use of elaboration leads to top-down, or meaning-based reading, whereas novice readers tend to use bottom-up processing as they read, assigning meaning to individual words but not relating larger chunks of language to their own prior knowledge. Elaboration is a frequently used strategy for listening, reading, writing, and grammar activities in a second language (O'Malley et al., 1987; Chamot et al., 1988). Elaboration is of particular interest to second language

researchers studying transfer in bilingual individuals who learn to use the body of prior knowledge originally acquired in the first language to comprehend new information presented in the second language. Cross-lingual elaboration is much more likely to be used by more effective language learners than by less effective ones, who may believe that knowledge acquired in the first language is not accessible in the second language (O'Malley et al., in press). For these reasons, training second language learners to use appropriate elaborations to enhance comprehension could be extremely effective in improving both listening and reading skills.

Two elaboration training studies conducted in first language settings could be adapted fairly easily for second language students. Weinstein (1975) conducted a study in which ninth grade students were taught to use a variety of elaborations, including sentences, images, analogies, implications, relationships, and paraphrases, and to apply them to both memory tasks and reading comprehension passages. The materials on which the strategies were practiced were taken from different content areas in the ninth grade curriculum. Cues to use the strategies were reduced during later training sessions so that students could begin to use the strategies autonomously. The delayed reading comprehension post-test showed that the students trained to use the strategies significantly outperformed those in the control groups. Having shown that students could be taught to use elaboration strategies effectively, Weinstein and her colleagues went on to develop the Individual Learning Skills

university course (described in Exhibit VII-1), in which students have significantly increased their learning ability, particularly in reading comprehension (Weinstein & Underwood, 1985).

A second elaboration training approach which could be used with second language learners was a study conducted by Gagne and her coworkers (1985) in which seventh graders were taught how to recognize, generate, and evaluate elaboration strategies for a text they wanted to remember. The training sequence began with students first deciding on the value of the material to be read; an important point communicated was that not every type of text is or should be necessarily remembered. Once students made the decision that they wanted to remember a text, they engaged in a variety of training activities. First, students had to determine whether they understood the material, and in the case of comprehension difficulties, they were directed to use strategies such as using resources or asking for clarification to understand the text. Once comprehension was perceived to be satisfactory, students had to generate elaborations on the new information that would help establish links between prior knowledge and the information to be recalled. At the conclusion of the study, students who had been trained to make appropriate elaborations were able to recall significantly more from the reading passages than were control group students.

Another type of learning strategy which has been successfully used for training in first language contexts is cooperation or cooperative learning. Cooperative learning involves social strategies in which students work together in heterogeneous small groups towards a common goal. Extensive

research on cooperative learning indicates that it is effective in increasing achievement on school tasks as well as fostering positive attitudes of students towards themselves and each other (Slavin, 1980; 1987). The extension of cooperative learning strategies to the second language classroom has been advocated as a way of achieving these same benefits for second language learners and the additional benefit of increased opportunities for meaningful language practice (Chamot & O'Malley, 1987; Kagan, 1988).

Good language learners have a wide repertoire of learning strategies and use a series of strategies rather than a single strategy when engaged in a learning task. Therefore, a training system in which multiple strategies are taught within a single package would appear to be beneficial. Such a multiple strategy training program is Reciprocal Teaching, developed by Palincsar and Brown (1982; 1985) for improving reading comprehension. This instructional strategy embodies cooperative learning techniques in which students work in small groups to develop comprehension of a written text. At first the teacher models the strategies to be used, and later each student in the group acts as the teacher to go through the strategies in turn. Group members first read a portion of the text (one paragraph or more) silently, then the person acting as teacher summarizes what has been read, identifies and clarifies difficult parts, asks group members comprehension questions, and then predicts what information the next paragraph or section will present. As this sequence is repeated, students become more adept at using the

four comprehension strategies and also improve their performance on reading comprehension tests (Brown, Armbruster, & Baker, 1986). Reciprocal Teaching in a foreign language classroom would be most appropriate at more advanced levels of study, as students would also practice using the target language for discussing the content read. The general framework of cooperative learning with group members sharing the responsibility for developing competence in a task could be developed even at beginning levels, however, and for language skills other than reading comprehension.

Another promising teaching technique with clear application to the second language classroom is **K-W-L** (Ogle, 1986), in which students first identify what they already **K**now about a topic, then state what they **W**ant to learn about the topic, and, after interacting with the new information, what they have **L**earned about the topic. This sequence of strategies involves the following steps: (1) elaboration (activation of prior knowledge); (2) selective attention to the particular content that they want to learn; and (3) summarizing the main points that were learned. The final phase also serves as a self-evaluation activity in which the student identifies the personal learning outcomes of the activity. This sequence of strategies is obviously useful for any subject, including foreign language learning.

These brief summaries of learning strategy training studies recently conducted in first language contexts sample a small number of the innovative studies that are being conducted with students who are being educated in their native language. These

and other similar studies are waiting to be replicated and adapted to students learning a foreign language.

The Course Development Study

The ESL training study (O'Malley et al., 1985b) demonstrated that learning strategy training can be effectively implemented in real classroom settings. However, the training was conducted by researchers who, although experienced language teachers themselves, were nevertheless not the regular classroom teachers of the students involved. This left open the question of whether classroom teachers would and could provide learning strategy instruction as part of their regular classes.

The Course Development Study, the third study conducted under the current project "A Study of Learning Strategies in Foreign Language Instruction", sought to answer this and other practical implementation questions.

Objectives

The Foreign Language Course Development Study had three main objectives. The principal objective was to discover whether and how foreign language instructors would incorporate learning strategy instruction in their classrooms. A second objective was to use the instructors' in-depth knowledge about their students and their course objectives to select for instruction those strategies which they believed would be most effective in promoting student achievement in specific language skills. Finally, this study sought to discover how instructors would integrate the strategy instruction into other class activities

and whether they would opt for direct or embedded instruction.

Method

The main approach taken was to gain the cooperation of the foreign language instructors whose students we had been working with in the strategy identification studies in adding some instruction in learning strategies to their classes. A number of classes of participating instructors were then observed when learning strategy instruction was taking place, and narrative descriptions were developed of the instructional context, individual class activities, learning strategies taught and practiced, and any difficulties encountered.

Participants. The instructors who were asked to participate in this study were the regular classroom teachers or professors of high school Spanish students and Russian college students who had been involved in the Longitudinal study. Of the seven instructors of these students invited to collaborate in the study, two Spanish teachers and three Russian instructors expressed interest in participating. Of these five, one Spanish instructor subsequently withdrew from the study. Of the remaining, three (two Russian professors, one Spanish teacher) were highly experienced language teachers who said they had already integrated learning strategy instruction in their courses, and one less experienced Russian instructor who was nevertheless convinced of the utility of learning strategy instruction and interested in incorporating it into her teaching.

Procedure. Meetings were set up with Spanish teachers and Russian instructors in order to acquaint them with the results of

the Descriptive Study of Foreign Language Learning Strategies (Chamot et al., 1987) and to ask for their participation in the Course Development study. Separate meetings were held for the Spanish and the Russian instructors.

Following the discussion on their students' learning strategies, as revealed in the Descriptive Study, instructors were asked if they would be willing to allow members of the research team to observe classes in which they would either introduce learning strategy instruction or continue with the strategy instruction they were already presenting. As stated above, of the three Spanish teachers and four Russian instructors present at these initial meetings, one Spanish teacher and three Russian instructors eventually agreed to participate in the study.

Nine classroom observations were then conducted during the spring and fall 1987 semesters. The classes observed were: third year Spanish, in which the instructional focus was on strategies for listening comprehension; non-intensive (e.g., 4 hours per week) first year Russian focusing on speaking skills; intensive (e.g., 8 hours per week) first year Russian, also focusing on strategies for speaking skills; and another intensive first year Russian class in which strategies for reading comprehension were developed.

For each observation, the researcher met briefly with the instructor before the class and was briefed on lesson objectives, student needs, and instructional concerns. During the class, the researcher sat in the back of the classroom and took notes on

teaching procedures, materials, student responses, learning strategies introduced and practiced, and reminders to use previously introduced strategies.

When time permitted, a debriefing session took place after the class between the researcher and the instructor, in which the instructor explained the reasons for specific procedures or activities and commented on students' reactions and behaviors.

Notes made by researchers on the class observations and briefing and debriefing sessions with instructors were transcribed immediately following the observations. These transcriptions provide detailed descriptions of the directions, cues, and activities used by these instructors in training their students to apply learning strategies to various types of foreign language tasks. Content analyses of these detailed descriptions were conducted in order to find evidence of the questions being investigated, namely, the relative ease of strategy instruction implementation, the degree to which direct or embedded instruction was provided, and the specific strategies selected for instruction for different language tasks.

Results

The results that relate to the question of whether foreign language instructors are willing and able to add learning strategy instruction to their regular classes will be discussed first, then the content analysis of the classroom observations will be presented.

The intent of sharing the results of the Descriptive study with the instructors whose students had provided the strategy

data was to provide information about differences in their students' existing strategy repertoires, and to enlist support and enthusiasm for the Course Development study. This plan was only partially successful, for only one of the three Spanish teachers and three of the four Russian instructors agreed to participate. Typical reasons for teachers' non-participation were: lack of interest in teaching learning strategies, and lack of time for either planning or implementing the instruction. Of the participating Russian instructors, one encountered difficulties related to student apathy for doing even routine classwork, and finally abandoned the attempt to teach learning strategies to that class (but not to other classes).

These results indicate that not all teachers may be willing to add a strategy instruction component to their second language classrooms, and that even those that do may become discouraged if students do not respond appropriately. Instructors who did agree to participate in the study were already employing a number of teaching techniques which encouraged student strategy use, and had some degree of prior knowledge about and experience in teaching learning strategies.

The transcripts of class observations were analyzed to identify the types of strategies taught for different language tasks and the manner in which individual instructors delivered instruction designed to promote student use of learning strategies.

Exhibit VII-3 indicates the major strategies taught and practiced for listening comprehension, reading comprehension, and speaking practice. (None of the participating instructors elected to provide strategy instruction for writing.) Each of

Exhibit VII-3

Foreign Language Course Development Study

Major Learning Strategies Taught for Different Tasks

Task	Description	Strategies	How Used
Listening Comprehension	Students listened to tape of authentic dialogues between shoppers and salesperson, then completed comprehension exercise.	Selective Attention	Focus on specific items while listening.
		Elaboration	Use what you know.
		Inferencing	Make logical guesses.
		Transfer	Recognize cognates.
Reading Comprehension	Students identified reading strategies in L1, then applied same strategies to L2 paragraph with new words underlined.	Inferencing	Use immediate and extended context to guess new words.
		Deduction	Use grammar rules to identify word forms.
		Elaboration	Use prior knowledge.
		Transfer	Recognize, use cognates.
Speaking	Students worked in groups to prepare sections of difficult reading text to retell to class so that all would understand it.	Substitution	Use synonyms, paraphrases and gestures to communicate meaning.
		Cooperation	Work in pairs or groups to plan and evaluate task.
		Self-Evaluation	Check own ability to communicate successfully.

the three activities selected was taught by a different instructor. As mentioned above, the fourth instructor participating in the study had to cancel his plans for learning strategy instruction.

The principal strategies taught for listening comprehension were the following:

- o Selective Attention: The instructor told students to focus on specific items while listening, such as, nouns, unknown words that they can ask for clarification about, numbers, important words that carry meaning, intonation contours and stressed words, language function of the word or phrase.

- o Elaboration: The instructor pointed out what students already knew and suggested how they could use this academic or world knowledge to make an inference about the meaning of an unknown word.

- o Inferencing: The instructor first focused on strategies such as selective attention, elaboration, transfer, or deduction, and then suggested that students make inferences based on information elicited from these strategies.

- o Transfer: The instructor called attention to similar English words and cognates to suggest meanings of new words; she also pointed out similarities in the root of a new word with that of a known word in the L2.

The principal strategies taught for reading comprehension were the following:

- o Inferencing: The instructor identified and named the strategy based on students' descriptions of ways in which they used context both at the sentence and discourse levels to guess at meanings of unknown words.

- o Deduction: The instructor elicited from students their application of grammatical rules to identify the form of unknown words in the text (in both L1 and L2), which led to guesses about the type of word it would be (e.g., adverb, place noun, etc.)

- o Elaboration: The instructor recognized and encouraged student use of prior knowledge, both academic and real world, to make decisions about probable meanings.

- o Transfer: The instructor elicited from students recognition of cognates and similar-sounding words in L1 that could be applied to understanding the new words in L2.

The principal strategies taught for the speaking task were the following:

- o Substitution: The instructor told students to use synonyms, paraphrases, and gestures to get across their meaning in the text retelling task.
- o Cooperation: The instructor had students work in small groups on the speaking assignment, and encouraged them to help each other with this task.
- o Self-Evaluation: The instructor provided opportunities for students to check how well they had made themselves understood and to discuss their communicative effectiveness.

In addition to the major strategies identified, instructors also taught or encouraged the use of a number of other strategies which supported the main strategies when used in combination with them. For example, students were reminded to self-monitor comprehension to decide if an inference made sense in the context, to ask questions for clarification when they did not understand, to make mental images to assist comprehension, to use what they already knew in the speaking activity (elaboration), and to self-monitor their oral production for errors that would impede comprehensibility.

In analyzing the actual instructional sequence followed in each class observation, it is immediately apparent that, though each instructor had integrated learning strategy instruction successfully into the foreign language course, each also had a somewhat different approach to actual implementation and lesson structure. The following summary of the general approach followed for each classroom illustrates the differences and similarities of each approach.

Listening Comprehension. The materials used in this class were authentic tape recordings of shopping exchanges taking place against the normal background noise of people and traffic. Comprehension questions in English were provided before the tape was played, and students listened to one section of the tape at a time, answering the questions and discussing that section before listening to the next section. The instructor told or reminded students of what and how to listen before playing each tape segment. For example, students were reminded to listen for specific items, such as nouns or the answers to the comprehension questions, and to tune out irrelevant background noise. After playing a section, the instructor would identify new words and guide students to remember what they already knew and use that knowledge to make guesses about new items. Cognates were identified and students were encouraged to use them in clarifying the total meaning of a phrase. The sequence of instruction - listening -discusssion - instruction, was repeated at a rapid and enthusiastic pace throughout the classes observed. Strategies were not identified by name; instead, the instructor focused on specific hints and techniques for functional communication in the foreign language. Students were alert and most seemed to enjoy the pace and concentration required, though some students revealed in later interviews that they had felt considerable anxiety when first being exposed to this type of class.

Reading Comprehension. The materials used were an English text containing nonsense words and a foreign language text with new words underlined. The instructor provided an introduction

about how inferencing is used to guess at meanings of new words in English, but that most people do not carry over this strategy to reading in a second language. Then students read over the English text and individually wrote their guesses for the nonsense words and described how they had arrived at each guess. A general class discussion followed in which students described their mental processes in making the guesses, and the instructor identified each process and wrote a brief description on the board, reminding students of the ways in which they had used inferencing. Students next were given a foreign language text and asked to analyze the new words in the same way. A class discussion elicited different guesses and types of strategies for each of the underlined words in the foreign language text. These included the use of grammatical cues, semantic clues, knowledge of the world, and transfer of linguistic knowledge, especially in the use of cognates. The instructor continually named the processes students described, wrote them on the board, and explained how and why they were helpful in guessing at meanings of new words. The class ended with encouragement to use these strategies when reading in the foreign language. Afterwards, students were heard to comment favorably on the class and to indicate that they planned to use inferencing strategies in future reading assignments.

Speaking. A difficult text was assigned in sections to groups of students to prepare as an oral presentation for the next class. Since the text was challenging, each group had to utilize a number of resources to comprehend it themselves, then

had to find ways to retell it to their classmates so that they would understand it. This required that they employ synonyms, paraphrases, and gestures to clarify the intended meaning. The instructor provided specific instruction in the use of three strategies for this exercise: substitution (finding a different way of saying something), cooperation (working with a group to prepare and make a presentation), and self-evaluation (checking how well they were able to communicate with the rest of the class). Since the observations of this class, unlike those for listening and reading, took place at weekly intervals, it was possible to trace the types of practice opportunities provided for the three strategies introduced with the original text retelling assignment. One week later, a similar task was undertaken in which students had to read a new text aloud, retell it with substitutions for difficult parts, assist each other when difficulties were encountered, and evaluate the quality of the story retelling. Additional practice sessions included a vocabulary game using the strategies of substitution and cooperation, further practice with text retelling, and finally the development of role-plays requiring the use of the three strategies. With each new activity, the instructor reminded students of the strategies and explained how they could be applied to the new task and to communicative situations in real life, thus providing direct instruction in transfer of the strategies. Feedback by the instructor and through students' own self-evaluations was continual. Students performed the original task with marked enthusiasm and interest, but appeared somewhat less enthusiastic though still engaged for follow-up activities

in subsequent classes.

The fourth instructor participating in the study had planned to provide instruction on inferencing and self-monitoring as aids to developing speaking skills for second semester beginning level students. However, the attitude and lack of motivation exhibited by students in this class indicated that they were either not interested in or were unable to assume any responsibility for their own learning. In view of this, the instructor reluctantly reverted to what he termed a "mean" stance in which students were required to do extensive drill and practice exercises in order to memorize the basic grammatical elements required by the course. The instructor indicated that students could benefit from strategy instruction (which he had been accustomed to providing in other classes) only if they were willing to assume some responsibility for their own learning, and he had found that this particular group expected the teacher to direct their learning.

Discussion

A major objective of the study was to find out whether foreign language instructors would be able and willing to integrate learning strategy instruction into their language classes. In prior second language learning strategy training studies the training was provided by the researchers (e.g., Hosenfeld et al., 1981; O'Malley et al., 1985b). In order for learning strategy instruction to become an integral part of second language teaching, classroom teachers need to not only see the value of such instruction and but also develop the skills for its implementation. In this study only one workshop on learning

strategies was provided to the foreign language instructors, and those who eventually decided to participate in the study were instructors who had prior experience with learning strategy instruction. What this appears to indicate is that not all teachers have the necessary motivation or skills to add learning strategy instruction to their classes, and that substantial training may be necessary both to convince teachers of the utility of learning strategy training and to develop the instructional techniques that will help students become more autonomous language learners.

A second objective of the study was to discover the strategies selected for different language learning activities by foreign language instructors. As could be expected, the strategies selected for listening and reading comprehension were quite similar. Both instructors encouraged students to use inferencing to make logical guesses from context, elaboration of prior knowledge, and transfer of cognates from the first language. In addition, the use of deduction, or the application of grammar rules, was used in reading comprehension. The four strategies identified and practiced for reading were described by the instructor as different forms of inferencing. In the listening comprehension class the instructor also provided encouragement to use the metacognitive strategy of selective attention to specific items while listening.

The strategies taught for speaking included a metacognitive strategy (self-evaluation), a cognitive strategy (substitution), and a social/affective strategy (cooperation). Although none of

the participating instructors elected to provide strategy instruction for writing, it is likely that the strategies taught for speaking could be equally useful in writing.

Elaboration, which in prior studies (O'Malley et al., 1987; Chamot et al., 1987; Chamot et al., 1988) emerged as a significant strategy characteristic of more effective language learners, was selected by participating instructors in this study for receptive language tasks, that is, listening and reading. Elaboration was not selected as a strategy to be taught for speaking, yet speaking (and writing) obviously draws on the student's prior knowledge and schemas in order to deliver a meaningful message.

The third objective of this study was to document the way in which different instructors actually implemented instruction in different types of learning strategies. Each participating instructor had an individual way of providing learning strategy instruction. All instructors provided direct rather than embedded strategy training by informing students of the purpose and value of the techniques they were asked to try. The instructors for reading comprehension and speaking identified the strategies by name, whereas the listening comprehension instructor described the behavior recommended without giving it a specific name. All strategy instruction and discussion was provided in English, which was probably necessary, given the fact that students were still limited in their proficiency in the foreign language. How to provide learning strategy instruction to students without a common language background or by a non-bilingual teacher is an area of research that needs to be

investigated. Only one of the participating instructors had students identify the strategies they were already using in their native language as a springboard to transferring the same strategies to the foreign language.

The importance of motivation in learning strategy instruction was clearly shown in this study. Students in the classrooms of the three instructors who were successful in implementing learning strategy training engaged in the activities with apparent enthusiasm, tempered in some cases by apprehension or diminution of the original level of enthusiasm in subsequent classes. The fourth instructor, however, encountered apathy and indifference to language learning in his class, and felt forced to abandon the attempt to train learning strategies. The will to learn appears to be an essential prerequisite for developing the skill to learn (Paris, 1988).

A major instructional implication emerging from this study is that while learning strategy instruction <u>can</u> be implemented successfully in second language classrooms, the success of such training is dependent on a number of factors, including teacher interest, development of techniques for instructing students in the effective use of learning strategies, and the ability to provide a motivational framework that can convince students of the value of learning strategies.

CHAPTER VIII

Applications and Implications

This chapter suggests ways in which the findings of the Descriptive, Longitudinal, and Course Development studies can be applied to the classroom, and discusses implications from these studies for future research directions in foreign language learning strategies.

Classroom Applications

In general, findings of this foreign language learning strategies project indicate that all students, no matter what their degree of success in learning a foreign language, have some cognitive control over their learning efforts and are able to describe their own mental processes. The main differentiation between the more effective students and the less effective ones was in the way in which strategies were used and the greater range of different types of strategies used by effective students. What this indicates for foreign language instruction is that teachers can profit from their students' awareness and use of learning strategies to show them how to develop new and potentially more powerful strategies.

Because new strategies take time to acquire and may initially seem burdensome to students, teachers need to plan activities that will motivate students to try new strategies and that will provide sufficient practice opportunities to enable students to internalize the new strategies. Based on the instructional

sequences described in Chapter VII (e.g., Hosenfeld et al., 1981; Jones et al., 1987; O'Malley & Chamot, forthcoming; Weinstein & Underwood, 1983), a learning strategy instruction framework might include the following steps: identifying students' current strategies, assessing their strategy needs, planning strategy instruction, direct teaching of strategies for different language skills, extensive opportunities to practice using the strategies, evaluation of strategy use, and helping students transfer strategies to new tasks. Findings of the three studies conducted in the **Learning Strategies in Foreign Language Instruction** project suggest a number of specific classroom activities for each of these steps.

Identifying Students' Current Strategies. Three major purposes can be achieved through the identification of strategies students are already using for different foreign language tasks. First, students develop metacognitive awareness as they describe their own thinking processes and discover those of their classmates. Second, as students discuss their learning strategies with their peers, they discover new strategies and new applications of familiar strategies. Finally, teachers can assess the strengths and weaknesses in students' current strategy use and use this information to plan strategy instruction.

In the descriptive study students' current strategies were identified retrospectively through group interviews. The disadvantage of retrospective interviews is that students may not

report their strategy use accurately - they may forget to mention some strategies (especially those that have become so automatic that they may be operating on a subconscious level), and they may claim to use strategies that they do not in fact use with any frequency. On the other hand, a retrospective interview allows the student to reflect on all phases of a learning task - from initial presentation by the teacher or textbook, through various kinds of study situations, and finally to the utilization of what was learned by successfully completing a communicative exchange or formal assessment activity. In the Longitudinal Study, students' on-line processing was tapped because they reported their thoughts while actively working on a language task. The advantage of the think-aloud interviews is that students have immediate access to strategies operating in short term memory and can report on sequences of strategies used to solve a specific problem. The disadvantage of think-aloud interviews is that they do not permit a sampling of all the strategies a student might use in understanding, studying, and recalling new information. Teachers might wish to use both retrospective interviews and think-aloud interviews to discover the strategies their students are currently using. These interviews could be supplemented with individual strategy diaries, in which students record the strategies they use for foreign language assignments and also for other subjects. These diaries would then be shared and discussed in class, and students could decide whether strategies used for other subjects could be applied to foreign language study.

Both retrospective and think-aloud interviews can be conducted as group activities in the foreign language classroom. Students can work in small groups, with one student acting as the interviewer and another as the recorder. For the retrospective interview, the interviewer is provided with an interview guide similar to that used in the Descriptive Study. The guide describes three or four typical class activities, such as learning vocabulary, completing a grammar exercise, or engaging in a role play. Each activity description is followed by questions designed to elicit what approach the student takes. For example, typical questions might be, "How do you remember what the new words mean?", "How do you figure out what goes in the blank?", or "How do you prepare for a role play?" As each student has a turn to answer the questions, the recorder writes down the answers. A similar approach can be used for think-aloud interviews, except that instead of answering questions about a learning task, students take turns actually performing the task and telling their thoughts as they do so. The information gathered through these interviews can be analyzed by the students themselves in a number of ways.

One type of analysis can look for examples of strategies that, although expressed differently by different students, actually describe similar processes or behaviors. Another type of analysis would involve identification of the different kinds of strategies used for each different type of language task, and then determining which tasks elicit the most and fewest strategies. Students could also identify specific problems that

tend to occur in the different tasks, and identify the strategies that are most useful in solving those problems. Results of each group's analysis of its learning strategies can then be compared, and a class profile developed. Comparisons of strategy use between different classes and different levels of study can be made by the students themselves so that they can become aware of different degrees and levels of sophistication of strategy use for learning the foreign language. Another type of analysis which students can make is to compare the strategies reported by their group in retrospective interviews for given tasks to the strategies actually used for the same tasks during the think-aloud interview.

This type of active student involvement in the strategy identification stage can help build motivation and an understanding of their own cognitive processes, both necessary for learning strategy instruction to have a beneficial effect on students' acquisition of the new language.

Assessing Students' Strategy Needs. Once students' current learning strategies have been identified, teachers need to decide which additional strategies should be taught and which of the strategies currently used can be expanded and fine-tuned. Although individual preferences for certain strategies can be expected, all students can benefit from using strategies such as self-monitoring for comprehension, elaboration of prior knowledge, and making inferences. In addition, study skill

strategies such as note-taking, summarizing, and using resources are as useful in the foreign language classroom as they are for other types of academic learning.

Some cognitive learning strategies characteristically operate in second language contexts. For example, strategies such as translation, repetition, linguistic transfer, and deduction and induction of grammatical rules are so much a part of what foreign language students may already be doing, that the teacher may wish to focus on expanding students' range of strategies rather than refining well-known strategies already in use.

Findings from the Descriptive and Longitudinal studies indicate that in general students used a much smaller proportion of metacognitive strategies than cognitive strategies, and that most of the metacognitive strategies used were planning strategies. A teacher might want to provide instruction and practice in using metacognitive strategies, especially comprehension monitoring ones (which were a distinguishing characteristic of the more effective students), and self-evaluation strategies, which have been found to positively influence motivation (Jones et al., 1987; Paris, 1988). Since the students interviewed in the Descriptive and Longitudinal studies reported few social or affective strategies, a teacher might want to help students use cooperation as a strategy, not only because it assists motivation and learning in general (Slavin, 1980), but because it can also provide communicative practice in the new language (Chamot & O'Malley, 1987; Kagan, 1988).

Thus, the foreign language teacher can assess student needs for strategy instruction by analyzing the strategies currently being used, evaluating their degree of success, and using the findings of learning strategy research in both first and second language contexts as a guide to determining strategies that have the greatest potential for improving student learning and motivation.

Planning Strategy Instruction. Having decided on the strategy needs of a group of students, the teacher must then plan how to select, introduce, practice, review, and maintain the strategies to be taught. In order to conduct this planning, the teacher needs to consider the general course objectives and specific demands of the learning tasks students are asked to perform. The Longitudinal Study demonstrated that the general instructional approach of a teacher strongly influenced the types of strategies students used. For example, students in classrooms which emphasized grammatical knowledge and accuracy relied heavily on deduction and translation, while students in proficiency oriented classrooms used inferencing as a frequent strategy. The actual tasks students engaged in also had a strong impact on their choice of strategies, as comprehension tasks elicited strategies such as inferencing, writing tasks elicited organizational planning, deduction, and substitution, and vocabulary tasks elicited resourcing. In addition, some strategies were used for all types of language tasks, indicating that they are widely applicable to many learning activities. These highly useful and adaptable strategies include: self-monitoring for both

comprehension and production, self-evaluation for production, elaboration of prior knowledge, and summarizing for both comprehension and production.

In planning for learning strategy instruction, teachers not only have to decide on the strategies that will be most useful for meeting the needs of their particular students, but also must decide on the initial presentation of the strategies to be taught, types of practice activities, and follow-up activities that will help students internalize the new strategies.

In general, the initial presentation of the new strategy or combination of strategies should include a brief statement about why the strategy is important and how it is expected to assist students. Then, the teacher may plan to model the strategy through a type of think-aloud procedure in which he or she demonstrates the steps involved in approaching and completing the language task. For example, the teacher might say, "Let me tell you what I do when I write an essay in Russian. First, I spend some time planning. I ask myself some questions, such as: What do I know about this topic?" (Teacher writes Elaboration of Prior Knowledge on the board.) "Then I jot down in Russian every related idea that comes to me." (Teacher does so.) "Then I think of who will be reading my essay, what they already know, what they want to find out, and what interests them. This makes me think of new ideas, which I also jot down, and also makes me realize that some of the ideas I've jotted down are not really

relevant to this particular audience - so I cross them out." (Teacher adds some ideas, crosses out others.) "Now I'm ready to organize and plan my essay." (Teacher writes Organizational Planning on the board.) The teacher would continue in this way to describe the strategies that the students will later practice for themselves.

The same type of modeling can be done for any type of language task so that students can gain an understanding of the thought processes involved in using the new strategies.

After planning the initial presentation of the new strategies, teachers should plan for immediate practice by the students. After practicing the new strategies in class, students can be instructed to use them for a homework assignment and take notes of their own strategy use for a class discussion the next day. After students have practiced and discussed the new strategies on several similar types of language tasks, the teacher should gradually reduce the reminders to use the strategies to promote independent strategy use. However, because the acquisition of new strategies is a slow process, teachers should plan to recycle strategies and remind students to use them until they have firm evidence that students are in fact using them independently.

Direct Teaching of Strategies for Different Language Skills. Findings of the Descriptive, Longitudinal, and Course Development studies suggest a number of instructional activities that could be used to activate and promote the use of learning strategies

for different foreign language activities. This section presents suggested guidelines and activities for teaching learning strategies for listening, reading, and writing in a foreign language. Each instructional sequence begins with an activity and learning strategies to teach before actually engaging in the task, reminders to students to use the strategies while they are engaged in the task, and activities and strategies to develop students' ability to self-evaluate their own performance of the task after its completion. The exact sequence of activities for each language skill and the level of study for which the strategy sequence is appropriate are unclear at this time, and await clarification through actual classroom implementation, the focus of the follow-up study to be undertaken. In this new study, foreign language instructors will develop learning strategy sequences similar to those presented on the next pages but adapted to the needs and proficiency levels of their own students. The effectiveness of the strategy sequences will be tested by the teachers in their classrooms, and students will also participate in the evaluation of the strategies taught.

Before Listening

Teacher names the strategies to be practiced before listening (directed attention, elaboration, selective attention, and inferencing) and explains their importance. The teacher models strategies when they are presented initially and may also model them for review purposes. Then the teacher has students discuss or provides them with forms to write out answers to questions such as:

Directed Attention	What will I listen for? What is my objective? What will I have to do with the information I listen to (e.g., answer questions, take a test, retell a story, learn the information for a later application)?
Elaboration	What do I already know about the topic? Write down some key words and ideas in the foreign language. How is the text probably going to be organized (e.g., story, information, conversation, ad, etc.)?
Selective Attention	Students are provided with questions about the listening text and asked to read them, then answer this question: What types of information should I focus on while I listen (e.g., plot of a story, dates and names for history, topic of conversation, etc)? Can I think of specific L2 words that I can listen for?
Inferencing	The teacher asks students to predict the content of what they will be listening to, using the title, questions, and possibly illustrations to make inferences. The predictions are written on the board.

During Listening

The teacher explains that two major strategies are particularly useful during listening: self-monitoring and note-taking.

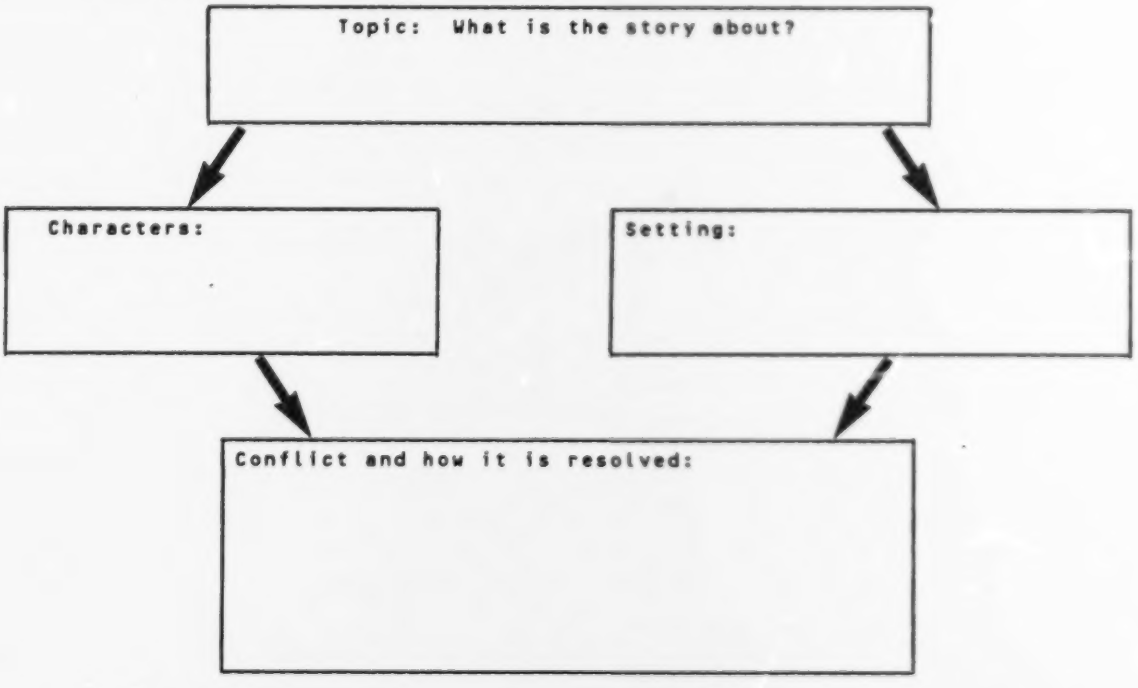
Self-Monitoring	The teacher tells students they should always be asking themselves, "Am I understanding this? Does it make sense?" The teacher suggests that students use one or more of the comprehension-assisting strategies listed below when they do not understand. If necessary, the teacher models

one or more of these strategies, which can be written and displayed on the board while students are listening.

Comprehension-assisting Strategies:

Directed Attention	My mind wandered, so I'll start paying closer attention.
Selective Attention	I'll listen for key ideas and not worry about the rest.
Elaboration	What do I already know about this? What does it make me think of? How do the different parts of this relate to each other?
Inferencing	Logically, what could this mean? I'll make an intelligent guess.
Transfer	Does it sound like anything I know in another language? I'll make a guess.

The teacher explains that taking organized notes in the foreign language while listening helps comprehension and retention. The teacher reminds students that they should write down only the key words and ideas as they hear them, using abbreviations where possible. The teacher provides students with a visual organizer on which to take notes. For example, if the listening selection is a story, the visual organizer might look like this:



Another type of visual organizer might provide spaces for main ideas and details or examples, while a third could simply provide the questions with space to write the answers as they are heard. The visual organizer is basically a graphic representation of the discourse structure of the text listened to.

After Listening

The teacher leads a discussion of how well students were able to self-monitor their comprehension during listening. Could they identify a problem when it occurred? What strategies did they use to solve comprehension problems? How did they work?

After the discussion, the teacher provides one or more follow-up activities for students to practice strategies while learning the material listened to. For each activity selected, the teacher indicates the strategy that will be practiced, and models it if it is a new strategy.

Questioning for Clarification	Students look through their notes, then ask the teacher or another student to explain anything that was not clear.
Cooperation	Students compare notes in small groups and pool their information.
Summarizing	Students use their notes to either retell or write in their own words a brief summary of what they just listened to.
Elaboration	Students write the answers to and/or discuss the following questions (which can be arranged as a table to complete): How does this new information fit in with what I already knew? What new things did I learn? Did I change any of my previous ideas?
Self-Evaluation	Students complete a checklist or dialogue journal that addresses these questions: How well did I accomplish this task? What was easy for me? What was difficult for me? How can I do better? What strategies worked best for me?

Before Reading

The teacher explains the importance of getting ready for reading, and names and models the strategies that assist the pre-reading stage: planning, elaboration, and selective attention. Then the teacher provides a graphic organizer for students to write their plan for using these three strategies before they read. An example of such a graphic organizer is:

Planning	The reason I want to read this selection is _____.
Elaboration	Prior knowledge that can help me is _____ _____.
Selective Attention	The type of information I need to pay special attention to is _____ _____.

The teacher leads a discussion on the different pre-reading plans, and in the process introduces or clarifies essential vocabulary for the reading selection.

During Reading

The teacher explains the process of reciprocal teaching (Palincsar & Brown, 1985) and the cluster of five strategies it utilizes: cooperation, summarizing, questioning, self-monitoring of text difficulties, and inferencing to make predictions. Next, the teacher models the strategies with one group of students. Then, the class is divided into groups of four. In each group, the students read a portion (one or more paragraphs) of the text silently and stop at the marker provided. Each student takes a turn at "teaching" the text, first by summarizing the content, then by asking other members of the group two or three questions about it, then by identifying areas of difficulty and discussing with the group ways to solve the difficulty, such as using the knowledge of one member of the group, looking up the meaning of unfamiliar words, etc. Finally, the student acting as teacher makes a prediction about what content will be presented in the next section of the text. Students continue to read section by section, taking turns at "teaching" the text and confirming or correcting the predictions made for each subsequent section. Although the procedures for reciprocal teaching may have to be taught in English, students will gain additional oral language practice by conducting the group's activities in the target language.

After Reading

The teacher explains to students the importance of self-evaluation of their own reading comprehension and of the

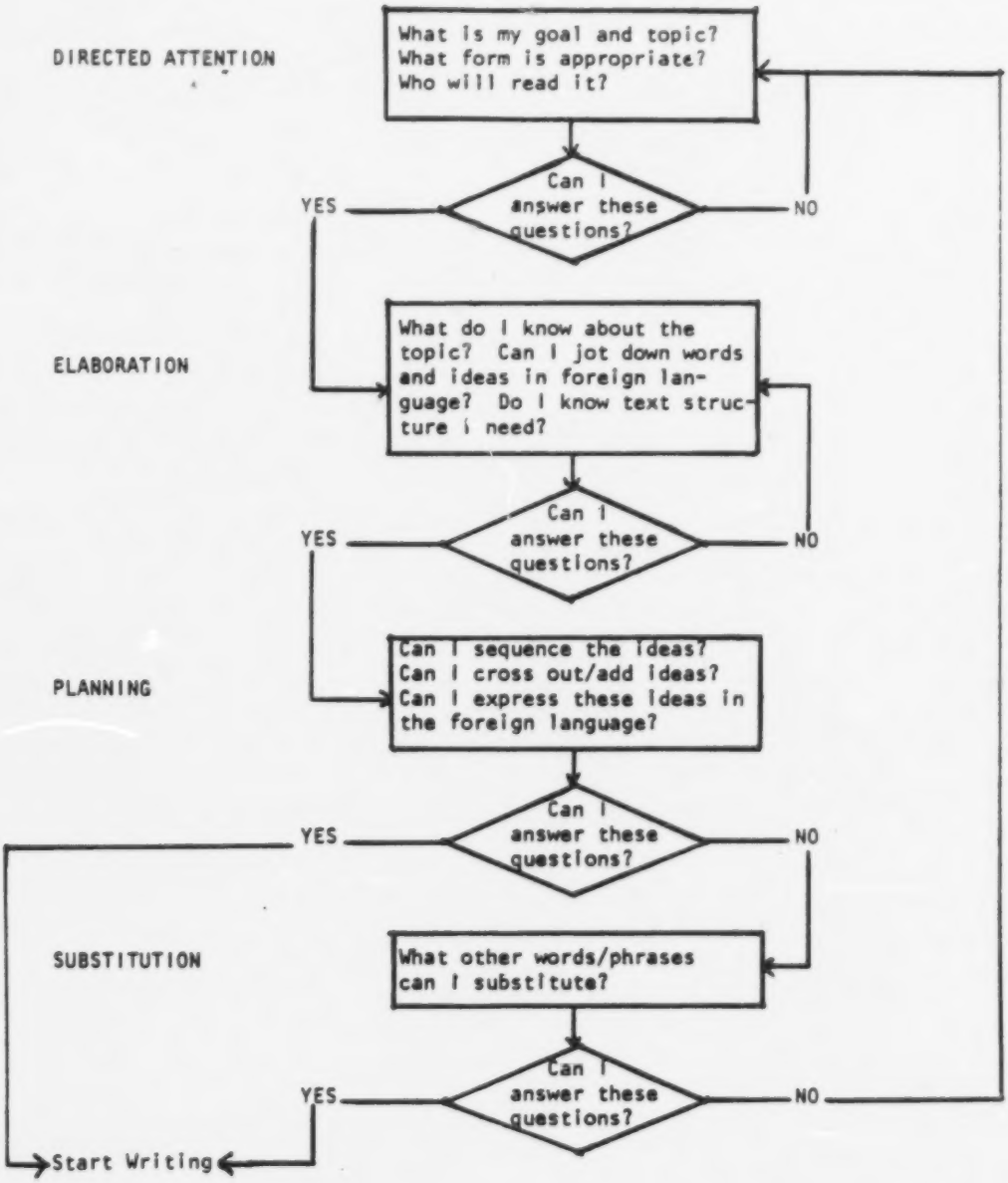
strategies used during reading. The teacher then provides students with a self-evaluation matrix such as the one presented below, and has them complete it individually. Later students can work in pairs or groups to compare their self-evaluation of what was understood, what strategies were helpful, difficulties encountered, and strategies to solve the difficulties.

SELF-EVALUATION MATRIX

	Section 1	Section 2	Section 3	Section 4
What I understood				
Strategies that helped				
Difficulties (What was unclear)				
Strategies to Solve Difficulties				

Before Writing

The teacher explains the importance of the pre-writing stage of writing, and names the strategies that assist in pre-writing: directed attention, elaboration, planning, and substitution. The teacher then demonstrates with a visual organizer how he or she uses these strategies before writing. The visual organizer can be in the form of a flow chart such as the following:


DIRECTED ATTENTION
What is my goal and topic? What form is appropriate? Who will read it?
Can I answer these questions?
YES
NO
ELABORATION
What do I know about the topic? Can I jot down words and ideas in foreign language? Do I know text structure I need?
Can I answer these questions?
YES
NO
PLANNING
Can I sequence the ideas? Can I cross out/add ideas? Can I express these ideas in the foreign language?
Can I answer these questions?
YES
NO
SUBSTITUTION
What other words/phrases can I substitute?
Can I answer these questions?
YES
NO
Start Writing

The teacher then has students use the same visual organizer to do their own pre-writing activities, first as a group activity to brainstorm for ideas and target language words and phrases, and then individually. Finally, the teacher explains to students that while planning for writing is essential, the actual writing process is recursive. This means that after planning for all or part of the writing assignment, students may write, plan some more, evaluate, do more planning, write again, evaluate, etc.

During Writing

The teacher names and models a variety of strategies to use during the composing stage. The teacher explains that while some students may prefer some strategies over others, it is important to try many strategies before selecting a particular set, and that strategies can change as language proficiency increases. The suggested strategies and the questions and actions that accompany them can be listed (as below) for students to refer to as necessary while writing. The teacher reminds students to refer to their planning flowchart as they write, and to feel free to revise the plan as they go along.

Elaboration	Text structure knowledge: Keep your text structure plan in mind as you write, and check that different parts relate to each other. World knowledge: Write about topics you know well in the foreign language. Language knowledge: Use association to search your memory for the word or form you need; if you cannot find it after 3 tries, go on to the strategy of substitution.
Substitution	Use synonyms and paraphrases if you cannot remember the exact word or form you need. Stay within what you know in the foreign language - minimal use of dictionaries!
Deduction	If you can remember the rule, use it to generate the form you need.
Self-Monitoring: Auditory	Try saying the word or phrase to youself - does it sound right?
Self-Monitoring: Visual	Try writing the word or phrase - does it look right?
Self-Monitoring: Stylistic	Is there a better, more precise, more interesting word or phrase to use?
Self-talk	Do not worry too much about errors - remind yourself that you will have time during revision to polish and correct your writing.

After Writing

The teacher explains that all writers need to revise and improve their first draft, and then describes different aspects of revision, such as, checking the relevance of their ideas, the text organization, personal style, and accuracy of language. The major metacognitive revision strategy is self-evaluation, which can call forth a number of cognitive strategies. The teacher models revision strategies appropriate to the students. For example, for students that focus on generating ideas while writing, the teacher might model revision for accuracy strategies. But for students who employ deduction as a major strategy while composing, the teacher might model revision for communication of meaning to the intended audience. After the teacher models the strategies, students can work in cooperative groups on the various types of revision strategies.

Revision Strategies for Accuracy

Deduction	Use the rules you know and the rules you discover from consulting other sources (teachers, textbooks, native speakers) to correct your work.
Elaboration	Check that what you have written makes sense in relation to your prior knowledge.
Self-Monitoring	Read aloud what you have written. How does it sound?
Cooperation	Share what you have written with a friend. Ask for your friend's corrections of the words and structures.

Revision Strategies for Content

Elaboration	World knowledge: Check that what you have written makes sense in relation to your prior general knowledge. Text structure knowledge: Check that the organization of what you have written is appropriate (e.g., story, narrative, essay) and that the sentences relate well to one another. Language knowledge: Check that the words and phrases you have selected match as closely as possible your intended meaning.
Cooperation	Share your revised writing with a friend or group. Ask for feedback on the ideas you have written and on the way the ideas are organized. Note down additional words, phrases, and ideas that you can add to your revision.

Students share "best and final" writing products.

Conclusion

The preceding descriptions of learning strategy instructional sequences are only some of the many possible ways in which teachers can provide their students with tools for better language learning. Much work still needs to be done in foreign language classrooms in order to find out what type of instruction in learning stratgies is most beneficial to students. Interstate's new project in foreign language learning strategies, which focuses upon direct teaching of learning strategies to foreign language students, will identify and describe what types of instruction are most effective.

What the current project has shown is that students of all levels and abilities use strategies when working with a foreign language, but that differences exist in how the strategies can be used and that these differences contribute to differing degrees of success in language learning. Effective use of strategies appears to lead to more effective language learning, particularly the use of certain core learning strategies (i.e., self-monitoring and elaboration). The intention of the learning strategy identification research which has guided the present study is to discover the strategies of the most effective foreign language students and to identify ways in which these effective strategies can be taught to the least effective foreign language students. Such learning strategy instruction can be expected to increase the ability of all students to acquire the complex cognitive skill of a foreign language.

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APPENDIX A

List of Sources
for the Spanish Reading Passages

The Cloze Reading Passages:
A typical day for Juan and Rosa
Radio Hidalgo
Teresa Pimentel, médica
Juanita's trip to Madrid
Te habla un gitano
Cómo defenderse de las mujeres
Los desaparecidos
La Rana y El Buey

The Intact Reading Passages:
Gossipy neighbor
Bomba de Humo
Jack the Ripper

Appendix A

These are the sources of the reading passages used in the think aloud interviews, as referenced in Exhibit III - 1. The author reference, date, and page number are provided here. The complete bibliographic reference (with title and publisher) is given at the bottom of the reading passages themselves, which are presented in the following pages of this appendix.

Ref.	Title (or Focus) of Reading	Source
a	A Typical Day for Juan & Rosa	Adapted.
b	Juanita's Trip to Madrid	Source unknown.
c	Los Desaparecidos	Rivers, W.M., Azevedo, M.M., Heflin, W.H., & Hyman-Opler, R. (1976). (Page 208.)
d	Radio Hidalgo	Jarvis, G.A. Bonin, T.M., Birckbichler, D.W., & Shih, L.C. (1986). (page 93)
e	Te Habla un Gitano	Adapted from Woodford, P.E., Marshall, R.G., & Schmitt, C.J. (1977). (page 343).
f	Gossipy Neighbor	Sacks, Z. da Silva. (1970). (page 4)
g	Teresa Pimentel, Médica	Adapted from Woodford, P.E., Marshall, R.G., & Schmitt, C.J. (1977). (page 61)
h	Bomba de Humo	Smith, W.F., & Medley, F.W., Jr. (1982). (page 10).
i	Cómo Defenderse de las Mujeres	Rivers, W.M., Azevedo, M.M., Heflin, W.H., & Hyman-Opler, R. (1986). (page 197-8).
j	Jack the Ripper	Smith, W.F., & Medley, F.W., Jr. (1982). (page 61).
k	La Rana y el Buey	Adapted from Simpson, L.B., & Torres-Rioseco, A. (1932). (pages 3-5).

A Typical Day for Juan and Rosa
Reading Cloze

Instructions: Below is a paragraph entitled "A Typical Day for Juan and His Sister Rosa." It describes Juan's day. Many of the verbs appear in their infinitive form. You are to conjugate these verbs into their action form. The first such verb is done for you as an example.

Also, some nouns are missing. These are marked by a blank line and the letter (N) (_____(N)). Try to fill in these blank spaces with an appropriate word. Think Aloud as you work!

Habla Juan:

Yo me levanto a las siete. Inmediatamente me baño (bañarse).

Rosa se baña (bañarse) después de mí. A las siete y media, vamos a

la cocina (N) para el desayuno. A las ocho salimos de casa y vamos (ir)

a la escuela. Voy a mi clase (N) de matemáticas y Rosa va (ir) a

su clase de historia. A las tres de la tarde regresamos juntos a la casa (N).

Mamá nos permite mirar el televisor hasta las cinco siete seis ocho (N). A esa hora, toda

la familia, incluso mi padre, se sienta a comer. Después de la cena, Rosa y

yo tenemos que estudiar (estudiar). Rosa es mejor estudiante que

yo; ella siempre termina (terminar) primero. A las diez en punto

ella va a dormir, pero yo no. Me acuesto a las once porque yo soy mayor.

Radio Hidalgo
Reading Cloze

Instructions: Below is a short reading passage called "Radio Hidalgo." Some of the words in the passage are missing. We would like you to read this passage and fill in each blank with an appropriate word. The first blank is done for you as an example. Think aloud as you work!

A student who works at the Hidalgo High School radio station is announcing the school news:

Buenos días, amigos. Aquí estamos otra vez con las noticias de nuestra escuela. La clase de español está emocionada porque esta noche todos van al baile en el Centro Hispano. ¡Qué fantástico!

Mañana la familia de Roberto Herrera va de vacaciones a Puerto Rico, pero él no va. Tiene tres exámenes esta semana y si no estudia, va a tener problemas. ¡Buena suerte, Roberto!

Y ahora el tiempo para hoy. Hace viento y está lloviendo. ¡Qué pena!, porque hoy Marta León quiere montar bicicleta, Pablo García tiene ganas de ir a nadar, y Francisca Fuentes quiere sacar fotos.

Una mala noticia: el profesor de ciencia matemática todavía está enfermo y no va a estar en la escuela por una semana. ¡Qué pena!, ¿no?

Bueno, nosotros ahora vamos a escuchar el nuevo disco de Julio Iglesias y después, regresamos con más noticias.

Source: Jarvis, G.A., Bonin, T.M., Birckbichler, D.W., & Shih, L.C. (1986). ¿Y tú? New York: Holt, Rinehart & Winston. (Page 93)

Teresa Pimentel, Medica
Reading Cloze

Instructions: Below is a reading passage called "Teresa Pimentel, Médica." Some of the words in the passage are missing. We would like you to read this passage and fill in each blank with an appropriate word. The first such blank is done for you as an example. Remember to think aloud as you work!

Teresa Pimentel es médica. Tiene veintiocho años y __vive__ en un pueblo pequeño. Todas las mañanas se levanta a __las__ seis, toma un poco de pan y café, __sale__ de casa, y a las siete está en __el__ hospital.

Todos los días visita a sus pacientes, les toma __la__ presión arterial y les ausculta. De vez en __cuando__ les hace otras pruebas médicas. Pasa mucho tiempo __con__ sus pacientes, explicándoles sus problemas médicos y contestando __sus__ preguntas.

Si tiene tiempo, Teresa almuerza con su __novio__, Pedro. Pedro trabaja en una fábrica cerca del __hospital__. A ellos les gusta el restaurante chino __que__ está en la esquina. Allí pueden hablar sin interrupción __y__ la comida es buena y no muy cara.

__Ella__ tiene que trabajar en la sala de emergencia. __El__ trabajo allí es difícil. Siempre tiene que hacer __todo__ muy rápido. Pero muchas veces le salva la __vida__ a un paciente.

Muy a menudo ella se __pregunta__ por qué es médica. Siempre llega a la misma __conclusión__. Es médica porque quiere ayudar a su gente. __La__ profesión es, para Teresa Pimentel, más que un __trabajo__; es una causa. Ella está completamente dedicada a lo que hace.

Source: Adapted from Woodford, P.E., Marshall, R.G., & Schmitt, C.J. (1977). Español a sentirlo (4th ed.). New York: Webster Division, McGraw-Hill. (page 61).

Juanita's Trip to Madrid
Cloze Reading

Instructions: Below is a paragraph entitled "Un Viaje a Madrid." It describes Juanita's visit to Madrid. Many of the verbs appear in their infinitive form. You are to conjugate these verbs into their action form, if appropriate. Some verbs will be conjugated into the present tense, others into the past, still others into the subjunctive. The first such verb is done for you as an example.

Think Aloud as you work!

Habla Juanita Cotero:

El año pasado yo fui (ir) a Madrid para visitar (visitar)

a mi prima Clara. Además de ser mi prima, ella es (ser) buena amiga

también. Ella vive (vivir) con su familia en una casa tan enorme

que yo pude podía (poder) tener mi propria alcoba. Durante el día Clara

me llevó llevaba (llevar) en su coche por toda la ciudad. Ahora yo conozco

muy bien a Madrid! Nosotros nos divertimos (divertirse) tanto

que yo no quería (querer) irme. Pero, al fin tuve tenía (tener)

que regresar a los Estados Unidos. Cuando yo me despidí de ella en el aeropuerto,

ella me dió (dar) un abrazo fuerte y me dijo (decir):

"Juanita, yo espero que tu puedas (poder) visitarme el año que

viene (venir)." ¡Y eso es exactamente lo que yo voy (ir) a hacer!

Te Habla un Gitano
Reading Cloze

Instructions: Below is a short reading passage called "Te habla un gitano español." Some of the words in the passage are missing. We would like you to read this passage and fill in each blank with an appropriate word. The first blank is done for you. Remember to think aloud as you work!

Leí una vez en el periódico que hay jóvenes ___en___ otras partes del mundo que se quejan de ___que___ son esclavos de las máquinas y de las empresas. Si fueran gitanos, no serían esclavos de ___nada___ ni de nadie. Sé de lo que hablo. ___Soy___ gitano legítimo.

La gente de mala lengua dice que ___nosotros___ no trabajamos. Eso es mentira. Si uno pensara solamente en ___un___ trabajo de fábrica o de oficina, entonces sería verdad. Pero ___hay___ otras clases de trabajo. Por ejemplo, mi tía ___Pilar___ es millonaria -- no en dólares, claro, en pesetas. Si ___ella___ tuviera que trabajar en una oficina, se moriría ___de___ aburrimiento. Mi tía es una de las ___bailadores artistas___ más famosas del baile flamenco. Es posible que ella haya bailado en tantas ___partes ciudades___ del mundo como cualquier gran artista. Si no ___le___ pagaran, todavía bailaría, porque es artista. La verdad ___es___ que todos somos artistas de un tipo u otro.

Source: Adapted from Woodford, P.E., Marshall, R.G., & Schmitt, C.J. (1977). Español a sentirlo (4th ed.). New York: Webster Division, McGraw-Hill. (page 343).

Cómo Defenderse de las Mujeres
Reading Cloze

Directions: Below is a reading passage called "Cómo Defenderse de las Mujeres." Some of the words in the passage are missing. We would like you to read this passage and fill in each blank with an appropriate word. The first such blank is done for you as an example. Remember to think aloud as you work!

Todos los periódicos tienen artículos para las mujeres __que__ buscan un esposo. Estos artículos les ofrecen ideas __para__ atrapar facilmente a los hombres. ¿Puede un hombre __hacer__ algo contra eso? ¿Tiene él que __ser__ la víctima inocente de los planes de una mujer? ¡No! El hombre debe defenderse. Aquí están unas __sugerencias__ muy prácticas:

1. Cambie con frecuencia. Es necesario ver __a__ muchas chicas, porque cuando un hombre ve a __la__ misma todo el tiempo, está en el camino __del__ matrimonio.

2. Sea cruel con los niños y __los__ animales. Si una señorita ve que usted es __sentimental__, nunca va a dejarle escapar.

3. Muestre a la __chica__, y más importante a su padre, que usted __tiene__ muy poco dinero.

4. Trate muy mal a la __madre__ de la chica y también a sus amigas. __Cuando__ estas mujeres dicen cosas malas de usted, la __señorita__ no sabe qué hacer.

5. No demuestre cortesía. No __le__ abra la puerta del coche a la señorita. __no__ la ayude con el abrigo ni le diga __cosas__ dulces.

Si la señorita todavía le sigue a usted después de un mes de esta fórmula, ¡hombre, usted ha perdido!

Source: Rivers, W.M., Azevedo, M.M., Heflin, W.H., & Hyman-Opler, R. (1976). A practical guide to the teaching of Spanish (p. 197-198). New York: Oxford University Press.

Los Desaparecidos
Reading Cloze

Instructions: Below is a paragraph entitled "Los desaparecidos." Many of the verbs appear in their infinitive form. You are to conjugate these verbs into their action form. The first such verb is done for you as an example. Think Aloud as you work!

Casi cada día en los periódicos de Madrid o Barcelona se pueden leer artículos como éste: "Ha desaparecido (desaparecer) de la casa de sus padres el chico de dieciseís años, X. Lleva pantalones y suéter azules, y es (ser) alto y robusto. Si puede identificar al muchacho por esta foto, llame (llamar) por teléfono a sus padres."

En el pasado, ésto occuría (occurir) poco, y además era siempre en serio. El adolescente iba a otro país, a otra ciudad, se hacía (hacerse) un hombre, y cuando tenía una posición, una mujer, y a veces unos hijos, volvía (volver) a la casa de sus padres, feliz de haber realizado estas cosas "por sus propios medios."

Pero ahora hay una diferencia fundamental. Hoy día, los adolescentes no quieren (querer) escaparse a otro país ni a otra ciudad. El objetivo es (ser) vivir en la misma ciudad de sus padres, pero en otro apartamento. El año pasado la mayoría de los jóvenes alemanes que entraron (entrar) en la Universidad de Berlín tenían (tener) su residencia aparte de sus padres, aunque en la misma ciudad.

Source: Rivers, W.M., Azevedo, M.M., Heflin, W.H., & Hyman-Opler, R. (1976). A practical guide to the teaching of Spanish (p. 208). New York: Oxford University Press.

La Rana y el Buey
Reading Cloze

Instructions: Below is a reading passage called "La Rana y El Buey." Some of the words in the passage are missing. We would like you to read this passage and fill in each blank with an appropriate word. The first such blank is done for you as an example. Remember to think aloud as you work!

Es de nocne. El abuelo dice que está cansado, pero Teresita y yo somos tiranos y al fin le sacamos la promesa de un solo cuento, nada más. --Bueno, hijos-- comenzó, --en aquel estanque que había cerca de mi aldea vivía una familia de ranas. Allí se hallaban contentas, aunque pobres, y pasaban la vida cantando y divirtiéndose.

Un día la ranita más pequeña vino nadando furiosamente hacia su padre, toda sofocada y muerta de miedo. "¡Padre, padre!" gritó. "¡Hay un gran animal que se está bebiendo toda el agua del estanque y que va a dejarnos secas si no lo espantas!"

"Vamos, hija," respondió el padre. "No será gran cosa."

"¡Sí, padre, sí! ¡Ven a ver!" Así diciendo, la ranita echó a nadar hacia el otro lado del estanque, adonde llegó mucho antes de su padre, que era algo gordo, por su edad y su mucho comer. "¡Mira, padre!" dijo la ranita. "¡Allí está! ¡Mira qué horror de bestia!"

En efecto, era un buey que estaba en el agua hasta las rodillas bebiendo muy contento y era muy grande por cierto. Pero el padre rana le echó una mirada desdeñosa. "¿Nada más que éso?" dijo. "Vamos, hija, si no es más que un buey. Si te espantas por tan poco cosa, ¡mírame a mí ahora que soy algo más terrible que ese animal!"

Con ésto el padre rana se puso enfrente del buey y empezó a hincharse, y se hinchó tanto que más parecía globo que rana, pero el buey seguía bebiendo sin espantarse poco ni mucho.

"¡Déjate de tonterías, padre!" dijo su hija. "¡El buey no te hace caso siquiera! ¡Y cuidado que te vas a hacer daño con hincharte tanto!"

Pero el pobre padre rana estaba herido en su vanidad y resolvió espantar al buey o morir. Y así se hinchó de tal manera que al fin reventó como un globo, dejando a su hija muy triste por cierto. Y mientras ella, llorando amargamente, volvía al otro lado del estanque para dar la espantosa noticia a sus hermanas, el buey seguía bebiendo muy tranquilo.

Source: Simpson, L.B., & Torres-Rioseco, A. (1932). El libro de buen humor (pages 3-5).

"Gossipy Neighbors"

Reading in Spanish

Instructions: Below is the text of a brief dialogue between two women. Last semester, in your think aloud session with us, you listened to a dialogue involving one of the women talking below. This reading passage continues that story.

We would like you to read the passage, thinking aloud as you do so. Please try to be as complete as possible in saying what you are thinking as you make sense of the dialogue. After reading, you will be asked to answer the questions on the next page.

Amelia del Paso y su amiga Pilar toman café y hablan en la cocina.

A: Sí. Se llaman Campos -- Sara María y Ernesto. Viven en la casa del editor de la Nación. Son nuestros vecinos ahora.

P: ¿Son simpáticos?

A: Sí. Me gustan mucho... aunque la señora es mucho mayor que su esposo. Admite que tiene 36 años, pero yo creo que tiene más.

P: ¿Y el esposo? ¿Qué es?

A: Es ingeniero. Gana nueve o diez mil pesos al año. Pero no gastan. Simplemente no gastan. No hay criada. La señora limpia la casa por sí sola. Y los niños trabajan. Los dos grandes venden periódicos y las niñas ayudan en la casa, aún la pequeña.

P: Pues, en mi casa, no permitimos eso. Mis hijas solo estudian y toman lecciones de música. No tenemos millones, pero vivimos bien. Tomamos vacaciones y compramos....

(El teléfono suena. Amelia contesta.)

A: Ah, Isabel... Sí... Se llaman Campos.... Sara María.... Tiene 39 años o más.... No, no hay criada. No gastan dinero. Simplemente no gas-...

Source: Sacks da Silva, Z. (1970). Bridge program for invitación al español: uno. Usted y yo (p. 4). Toronto, Ontario: MacMillan.

"Bomba de Humo"

Reading in Spanish

Directions: Below is a short paragraph in Spanish. We would like you to read this paragraph, thinking aloud as you do so. Please try to be as complete as possible in saying aloud what you are thinking as you make sense of the paragraph.

After reading the paragraph, you will be asked to answer the questions on the next page.

BOMBA DE HUMO

Una compañía inglesa vende en el mercado un curioso sistema contra robos. Es para proteger el dinero que se lleva en cualquier medio de transporte. El sistema es de gran utilidad para los bancos y otros organismos que necesitan trasladar con frecuencia grandes cantidades de dinero o lingotes de metales preciosos.

El sistema consiste en colocar una bomba de humo y de colorantes en los sacos. Cuando uno de los guardias que transportan el dinero es atracado por alguien, hace estallar la bomba. El humo inmediatamente atrae la atención y, además, un tinte de color rojo se extiende sobre el dinero, lo cual permite su identificación posterior.

Please answer the questions on the following page.

Source: Smith, W.F., & Medley, F.W., Jr. (1982). Noticiario: Segundo nivel. Rowley, MA: Newbury House. (page 10).

Source: Smith, W.F., & Medley, F.W., Jr. (1982). Noticiario: Segundo nivel (p. 61). Rowley, MA: Newbury House.

"Jack the Ripper"

Reading in Spanish

Directions: Below is a short story in Spanish. We would like you to read the story, thinking aloud as you do so. Please try to be as complete as possible in saying aloud what you are thinking as you make sense of the passage.

After reading the paragraph, you will be asked to answer the questions at the bottom of the page.

En 1888 los asesinatos de "Jack the Ripper" causaron horror y vergüenza para la ciudad de Londres. Ocho mujeres de la calle cayeron víctimas del loco demente durante un período de un año. Es curioso notar que el asesinato de una de las víctimas motivó indirectamente la destrucción de una vieja superstición.

Se creía anteriormente que las retinas de los muertos conservaban la "fotografía" de la persona que era vista en el momento de fallecimiento. Scotland Yard, basándose en esta leyenda, fotografió los ojos abiertos de una de las víctimas para tratar de descubrir por este método la identidad del asesino.

Claro está que no dió resultado pero fue el primer experimento oficial que destruyó la fábula de las retinas fotográficas de los muertos.

Questions

1. ¿Qué quiere decir asesinatos?

   a. juegos
   b. homicidios
   c. criminales
   d. ejemplos

2. ¿Qué era la superstición vieja descrita en el párrafo?

3. ¿Qué hizo Scotland Yard acerca de esta superstición? ¿Por qué?

4. ¿Qué descubrió Scotland Yard?

5. ¿Cómo identificó al asesino?

APPENDIX B

List of Sources
for the Spanish Listening Passages

Text of the Listening Passages:
Un minero boliviano
La bienvenida
Cortesías
El carbón
El gato que nunca muere
Prohibido fumar en el tranvía
Vida en Marte

Appendix B

These are the sources of the listening passages used in the think aloud interviews, as referenced in Exhibit IV - 1. The author reference, date, and page number are provided here. The complete bibliographic reference (with title and publisher) is given at the bottom of the listening passages themselves, which are presented in the following pages of this appendix.

Ref.	Title (or Focus) of Listening	Source
a	Un minero boliviano	Lamadrid, E.E., Bull, W.E., & Briscoe, L.A. (1974). (page 116)
b	La bienvenida	Sacks, Z. da Silva. (1970). (page 1)
c	Cortesías	Adapted from Sacks, Z. da Silva. (1970). (pages 249 - 251).
d	El carbón	Adapted from Ames, G., & Wyler, R. (1967). (pages 198-99).
e	El gato que nunca muere	Adapted from Rivers, W.M., Azevedo, M.M., Heflin, W.H., & Hyman-Opler, R. (1976). (pages 217-218).
f	Prohibido fumar en el tranvía	Rivers, W.M., Azevedo, M.M., Heflin, W.H., & Hyman-Opler, R. (1976). (pages 198-199).
g	Vida en Marte	Smith, W.F., & Medley, F.W., Jr. (1982). (page 82).

"Un Minero Boliviano"

Script of Monologue:

Me llamo Francisco Ramírez Velasco, pero en el pueblo donde vivo me llaman Pancho. Soy boliviano. Vivo en un lugar muy frío en las montañas de los Andes. En mi pueblo hay muchas minas. Bolivia es un país muy rico en productos minerales. Yo trabajo en una mina toda la semana de lunes a sábado. Soy minero.

Yo no voy a la escuela durante el día con los otros muchachos del pueblo. Yo voy a una clase especial de siete a diez de la noche. En la clase estudiamos español, historia, y matemáticas. Hay más de veinte estudiantes en el programa nocturno. Todos son mineros. Trabajan en las minas muchas horas durante el día.

Comprehension Questions the Student is Expected to Answer:

1. What is Francisco's nickname in the village?
2. In what country does Francisco live? Where in this country does he live?
3. What does Francisco do for a living?
4. Does Francisco go to school during the day or at night? What subjects does he study?
5. How many students are in the program? What do they do for a living?

Source: Lamadrid, E.E., Bull, W.E., & Briscoe, L.A. (1974). Communicating in Spanish (p. 116). Boston: Houghton Mifflin Co.

"La Bienvenida"

Sra: Buenos días. ¿Hablo con la señora de Campos?

Sra C: Sí, señora.

Sra: ¿Pues me hace el favor de contestar algunas preguntas?

Sra C: Con mucho gusto. (PAUSE)

Sra: Bueno. Ahora, ¿su nombre entero, por favor?

Sra C: Sara María de Campos.

Sra: ¿Su edad?

Sra C: 36 años.

Sra: Trein-ta y seis... y su esposo, ¿cómo se llama?

Sra C: Ernesto.

Sra: ¿La edad de su esposo?

SraC: 35. (PAUSE)

Sra: ¿Y dónde trabaja su esposo?

Sra C: Trabaja en el centro. Es ingeniero.

Sra: ¿Cuánto gana el año?

Sra C: Unos ocho mil pesos, creo. (PAUSE)

Sra: Ajá... ¿Cuántos hijos tiene Ud., señora Campos?

Sra C: Cuatro. Dos muchachos y dos niñas.

Sra: ¿Ud. trabaja, señora?

Sra C: No, no trabajo.

Sra: ¿Tiene criada?

Sra C: No, no tengo criada.

Sra: ¿Entonces Ud. limpia la casa por sí sola?

Sra C: Sí, y también preparo las comidas. (PAUSE)

Sra: ¿Vive Ud. feliz con su esposo?

Sra C: Si, vivo muy feliz con mi esposo... pero, ¿por qué pregunta eso el gobierno?

Sra: Ah, señora Campos. No es el gobierno. Yo soy su vecina, Amelia de Paso. Vivo en la casa de al lado..... a la derecha.... ¡Bienvenidos! (FINAL PAUSE)

Source: Sacks da Silva, Z. (1970). Usted y yo (p. 1). Toronto: Macmillan.

"Cortesías"

Probablemente Ud. ya ha aprendido algunas cortesías, como "buenos días", "muy buenos", "hola Paco", "¿cómo estás?" y otras. Pero en realidad, hay muchas maneras de saludar a una persona, y la cortesía varía según las circunstancias. En efecto, muchas veces sólo la experiencia de vivir en un país hispano nos puede enseñar cuando debemos usar una forma y cuando debemos emplear otra. (PAUSE)

Tomemos por ejemplo... Estamos en la calle y vemos a un amigo. Nos paramos y decimos "Hola" y empezamos a conversar. "Hola" significa normalmente el principio de una conversación, y no es solamente un saludo casual al pasar. (PAUSE)

Ahora bien, si la persona a quien vemos en la calle no es un amigo íntimo, no le decimos "hola", sino "buenos", "muy buenos", "buenas tardes" o algo por el estilo. Entonces, si queremos, podemos detenernos para charlar, o podemos continuar nuestro camino. (PAUSE)

Pero si no tenemos la menor intención de hablar con esa persona, le sonreímos amablemente, tocamos ligeramente el ala del sombrero, y decimos sencillamente "Adiós." Imagínese Ud! En ciertas circunstancias, "adiós" significa "Hello." (PAUSE)

Una cosa más - si la persona es un buen amigo nuestro y todavía no hay tiempo para hablar, podemos decirle "¿Qué tal?" u "Hola. ¿Qué tal?" o "¿Qué hay?" y seguir adelante. Pero en realidad, ¿quién quiere dejar así a un amigo sin hablar un poco con él? El tiempo no le importa tanto al hispano como al norteamericano. (PAUSE)

Ahora bien, cuando contestamos el teléfono, hay otras fórmulas que tenemos que usar. Por ejemplo, suena el teléfono. Lo cogemos, y si estamos en España decimos "¿Diga...?" o "¿Dígame....?" Nunca decimos "hola" y solo si estamos en una oficina o en una casa elegantísima y muy formal, decimos "buenos días, Gutiérrez y Compañía... buenas tardes, la residencia Guzman...." En México, decimos "¿Bueno....?" Y en otras partes de la América hispana el uso varía. (PAUSE)

Y así sigue. Cortesías de la vida humana. Por ahora vamos a decir sencillamente, Adiós. Ah no, perdón. Hasta muy pronto. Hasta luego, amigo. (PAUSE)

Source: Adapted from Sacks da Silva, Z. (1970). Bridge program for invitación al español: uno. Usted y yo (pp. 249 - 251). Toronto: Macmillan.

"El Carbon"

Vamos a hablar hoy de uno de los tesoros de nuestro planeta - el carbón. Veremos por qué es importante el carbón en la civilización humana, y cómo se formó el carbón hace millones de años. (PAUSE)

Los cazadores prehistóricos descubrieron el modo de cultivar las plantas y criar animales. Estas ocupaciones les permitieron establecer aldeas permanentes. Investigaron las rocas de su medio, descubrieron los metales, y aprendieron la manera de fabricar instrumentos con ellos. Pero, para alimentar los fuegos de sus hogares, el único combustible que conocían era la leña. (PAUSE)

El hombre civilizado ha ampliado mucho sus conocimientos de las materias de la tierra que son útiles. Con los metales ha construido máquinas para la industria y barcos, ferrocarriles, y aviones. De las rocas ha obtenido combustible para mover las fábricas y los motores del transporte. Uno de los combustibles más importantes que utiliza el hombre hoy día es el carbón. (PAUSE)

Veremos ahora cómo se formó el carbon. Aunque parezca increíble, cuando quemamos carbón, usamos la luz del sol que llegó a la tierra hace 250 millones de años! En aquella época, América del Norte estaba cubierta por un mar interior, y en sus orillas existían pantanos cubiertos del helechos gigantes. Las hojas de estos helechos recogían energía del sol, indispensable para su crecimiento. Arboles y ramas cayeron al agua y allí el material de estas plantas se transformó en una sustancia oscura y esponjosa, llamada turba. (PAUSE)

Con el tiempo, el suelo se hundió y a los pantanos los cubrió el mar. Las rocas se acumularon sobre la turba, y la presión transformó ésta en lignito. La carga y la presión aumentaron y el lignito se convirtió en carbón. (PAUSE)

Hoy día, millones de toneladas de carbón son extraídas anualmente por los hombres con el auxilio de máquinas. Gracias al uso de estas máquinas, los mineros nos suminstran el carbón necesario para nuestra civilización. (PAUSE)

Actualmente, el carbón nos sirve no solamente como combustible sino también como materia prima. Derivados del carbón se usan para fabricar tintes, perfumes, plásticos, nilón, explosivos, medicinas, y otros muchos productos. El carbón es, verdaderamente, uno de los tesoros de nuestro planeta. (PAUSE)

Source: Adapted from Ames, G., & Wyler, R. (1967). Historia de la tierra (pp. 198-99). Mankato, MN: Creative Educational Society, Inc.

"El Gato que Nunca Muere"

Nuestro gato se llama Sancho. Es muy bonito, completamente negro con una pequena estrella blanca en la frente. (pause)

Es precioso. Todo la familia lo ama. Nuestros tres hijos juegan con él días enteros. (pause)

A cada hora del día, siempre es lo mismo. Todo el mundo está pensando en Sancho. Mi hijo dice: Mama, Sancho tiene sed. O - mi marido pregunta: ¿Por qué no das de comer a Sancho, Juana? (pause)

Como es facil de comprender, todo lo mejor es para Sancho. Compramos sardinas varias veces por semana porque a Sancho le gustan mucho. (pause)

Compramos también queso, porque a Sancho le gusta muchísimo el queso. Bebe una botella de leche todos los días. (pause)

Se dice que un gato tiene siete vidas. Estoy segura de que ésto es verdad, porque nuestro amado Sancho tiene muchas más. Tiene un sinnúmero de vidas. (pause)

Sancho sale mucho de la casa. Con frecuencia está al borde de la tumba. Muchas veces Sancho corre debajo de los automóviles que pasan velozmente enfrente de nuestra casa. (pause)

Cada vez que ésto pasa, creo que Sancho va a morir en la calle. Pero siempre sale al otro lado de los coches sin ningún daño. (pause)

Source: Adapted from Rivers, W.M., Azevedo, M.M., Heflin, W.H., & Hyman-Opler, R. (1976). A practical guide to the teaching of Spanish (pp. 217-218). New York: Oxford University Press.

"Prohibido Fumar en el Tranvia"

Un tranvía va por la calle Cangallo en Buenos Aires.
Un viejo con una pipa en la boca lo detiene en una esquina y sube. Paga sus diez centavos al cobrador y se sienta. Se sienta directamente bajo un letrero que dice: PROHIBIDO FUMAR EN EL TRANVIA.
Sigue con la pipa en la boca. (PAUSE FOR STUDENT TO THINK ALOUD)

El cobrador lo nota y se acerca. "Perdone Ud., señor," dice el cobrador, "pero está prohibido fumar en el tranvía."
"Lo sé," responde el de la pipa. "Aquí tenemos un letrero que lo anuncia." Y señala el letrero. (PAUSE FOR STUDENT TO THINK ALOUD)

"Muy bien," continúa el cobrador, "pero si Ud. insiste en fumar, tengo que hacerle bajar del tranvía. Es el reglamento."
"No insisto en fumar," dice el viejo, que todavía tiene en la boca la famosa pipa, de la cual sube el humo en espiral. (PAUSE FOR STUDENT TO THINK ALOUD)

"Luego deje Ud. de fumar," responde el cobrador.
"No estoy fumando," vuelve a decir el pasajero.

"Pues, ¿no tiene Ud. la pipa en la boca?" pregunta el cobrador.
"Claro que tengo la pipa en la boca," dice el viejo.

"Y no tiene tabaco en la pipa?" pregunta el cobrador.
"Por supuesto," responde el otro. "Pero no estoy fumando." (PAUSE FOR STUDENT TO THINK ALOUD)

El cobrador dice, "¿Y no sale humo de la pipa?"
"Claro," vuelve a decir el viejo, "pero digo que no estoy fumando." Y luego añade, extendiendo un pie delante del cobrador, "¿Ve Ud. mis pies? Llevo zapatos, un zapato en cada pie, pero eso no significa que estoy caminando a pie." (PAUSE FOR STUDENT TO THINK ALOUD)

Ante la lógica del pasajero, el cobrador tiene que retirarse y no le molesta más. (PAUSE FOR THINK ALOUD)

STUDENT'S COMPREHENSION QUESTIONS:

1. Where does the old man sit in the streetcar?
2. Why does the conductor approach him? What does the conductor want?
3. What is the passenger's response to the conductor's request?
4. What argument does the passenger use to explain his behavior? Does he convince the conductor?
5. What do you think of the old man's argument?

Source: Rivers, W.M., Azevedo, M.M., Heflin, W.H., & Hyman-Opler, R. (1976). A practical guide to the teaching of Spanish (pp. 198-99). New York: Oxford University Press.

"Vida en Marte"

Vida en Marte.

Marte, planeta de misterio, ha revelado algunos de sus secretos de su superficie, gracias a un sistema de transmisión de datos del Vikingo II. (PAUSE)

Las imágenes tomadas por sus cámaras y el resultado de los análisis de la atmósfera y del suelo tardardon dieciocho minutos en recorrer los 342 millones de kilómetros que separan a Marte de la Tierra. Las fotos permiten cartografiar la superficie con precisión. También han permitido ver a Fobos, uno de los dos satélites naturales de Marte, y los detalles de más de cien cráteres de acción volcánica o meteorológica. (PAUSE)

Los experimentos biológicos de la operación Vikingo estaban destinados a contestar la pregunta "¿Hay vida?" La primera información resultó afirmativa. Algo de entidad física o química dió muestras de gran actividad, aunque la posible existencia de algo de carácter biológico fue negado después. (PAUSE)

Sin embargo, los experimentos sí revelaron la existencia de elementos que se encuentran también en la atmósfera terrestre, y ésto ha aumentado el interés por entender mejor todas las características de ese planeta. (PAUSE)

Se cree que el color rojizo de Marte se deriva de un proceso de oxidación de las rocas ocurrido en el pasado. Los canales y valles que atraviesan la superficie indican la posible influencia de la erosión por agua, pero ésta, como el oxígeno y la actividad volcánica, es también de otros tiempos y de otras épocas. (FINAL PAUSE)

Source: Smith, W.F., & Medley, F.W., Jr. (1982). Noticiario: Segundo nivel (p. 82). Rowley, MA: Newbury House.

APPENDIX C

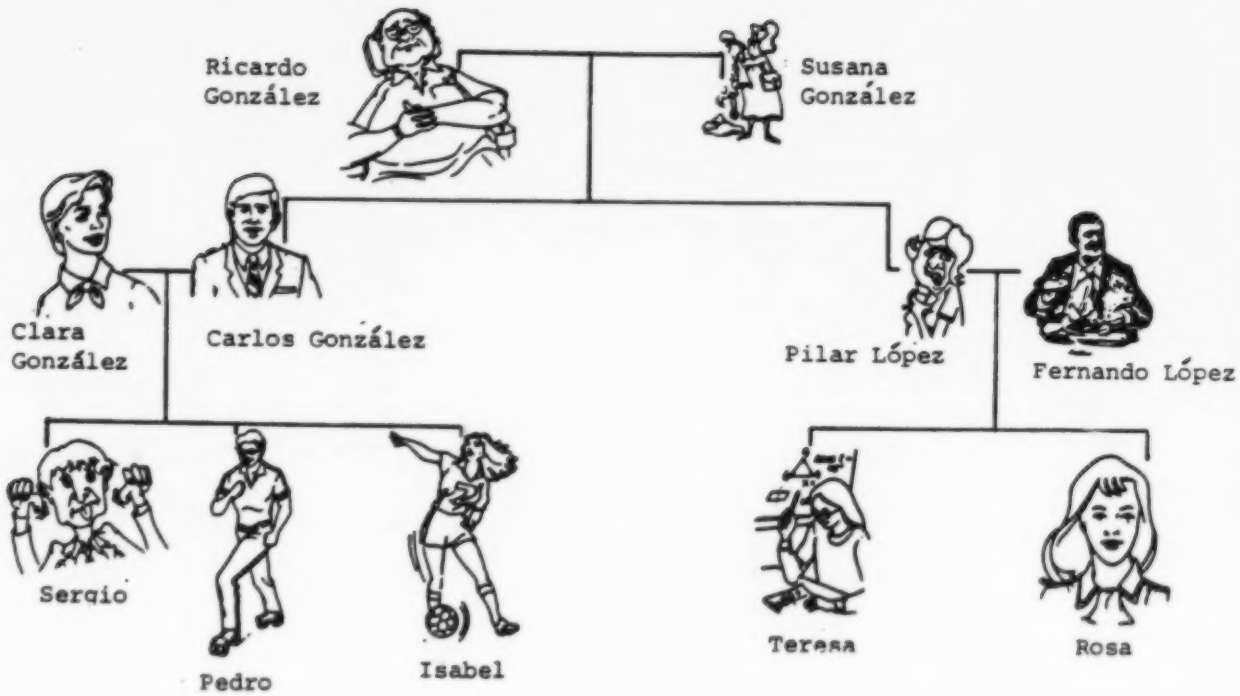
List of Sources for the Pictures
Used in the Writing Activity

The Pictures:
Family Tree
Busy City Street
The Party
Las Oficinas
Invaders from Mars
Crowded Hotel Lobby

APPENDIX C

These are the sources of the writing pictures used in the think aloud interviews, as referenced in Exhibit V-1. The author reference, date, and page numbers are provided here. The complete bibiographic reference (with title and publisher) is given at the bottom of the pictures themselves, which are presented in the following pages of this appendix.

Ref.	Title (or Focus)	Source
a	Family Tree	Pictures of the individuals in the family tree are drawn from the pages of: Yorkey et al. (1984).
b	Busy City Street	Yorkey et al. (1984), page 82.
c	The Party	Mellgren, L., & Walker, M. (1980), page 102.
d	Las Oficinas	Motta, J.C., & Riley, K.L. (1982), page 28.
e	Invaders from Mars	Mellgren, L., & Walker, M. (1980), page 35.
f	Crowded Hotel Lobby	World English 4: The HBJ English Program (page 94).



ACTIVITY 2
Writing in Spanish

Instructions: Using the family tree above and pretending you're still Isabel, we would like you to write a short paragraph about the Gonzalez family. You can say whatever you want to about them. Please think aloud as you decide what you're going to write.

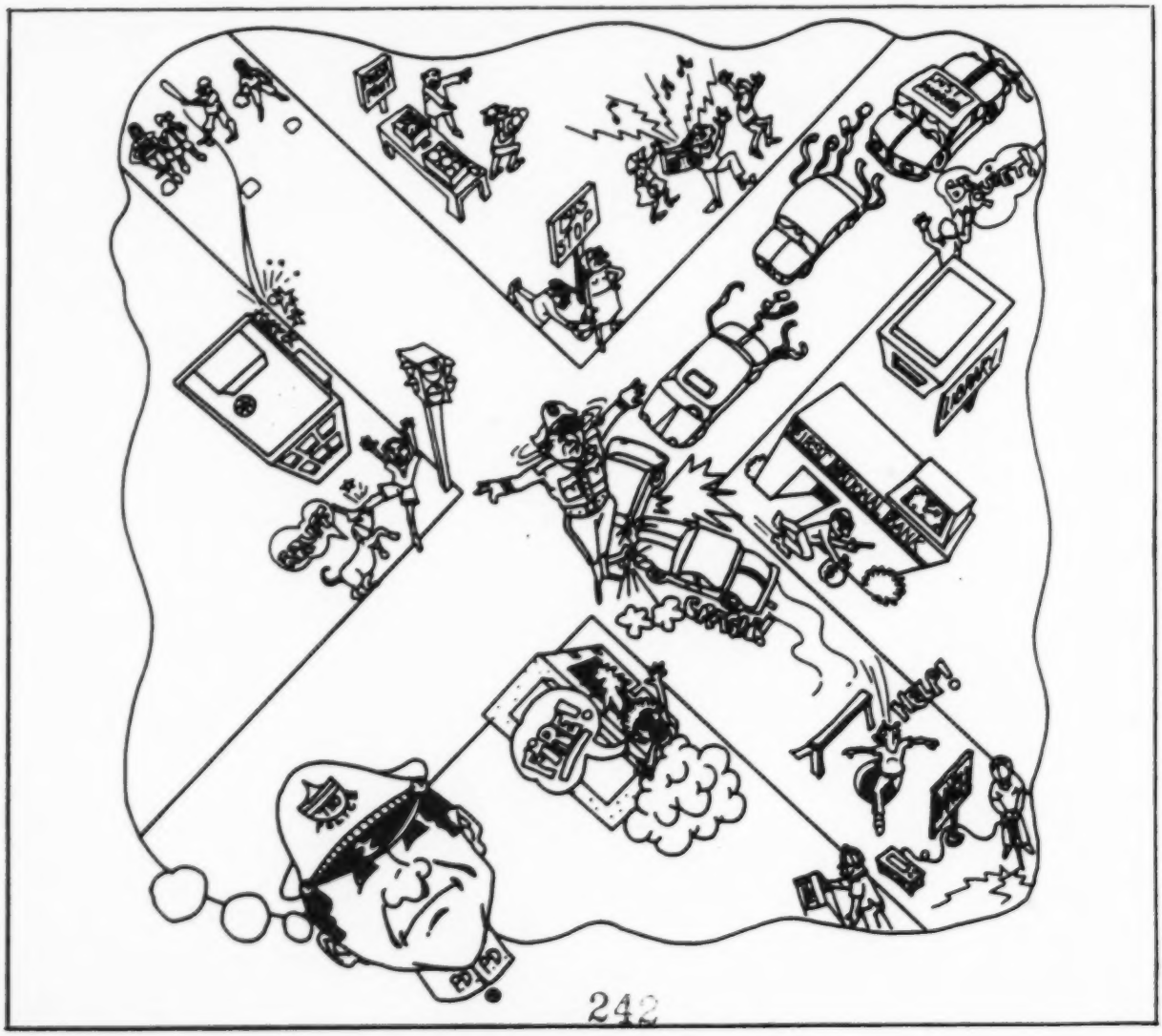
Source of pictures used in Family Tree:
Yorkey, R.C., Barrutia, R., Chamot, A.U., Rainey, I.D., Gonzalez, J.B., Ney, J.W., & Woolf, W.L. (1984). New Intercom. Boston: Heinle & Heinle.

Source: Yorkey, R.C., Barrutia, R., Chamot, A.U., Rainey, I.D., Gonzalez, J.B., Ney, J.W., & Woolf, W.L. (1984). New Intercom 3 (p. 82). Boston: Heinle & Heinle.

Activity 3
Writing in Spanish

Instructions: Look at the picture below. As you can see, there is something happening on every street corner and in the street itself. We would like you to pick a part of the picture to describe. You may describe more than one part, if you like.

Please write a short paragraph in Spanish describing the section of the picture that you choose. Think aloud as you work, saying what is going through your mind as you formulate each sentence in Spanish. Try to be as complete as possible. Work as you would normally work, if given a writing assignment in Spanish.



THINK ALOUD
Level 2
Writing in Spanish

Instructions: Look at the picture below. As you can see, the picture shows a party in progress. We would like you to write a paragraph or so in Spanish about what is going on in this picture.

On the next page is space for writing. THINK ALOUD AS YOU WORK, saying aloud what is going through your mind as you formulate each sentence in Spanish. Work as you would normally work, if given a writing assignment in Spanish.

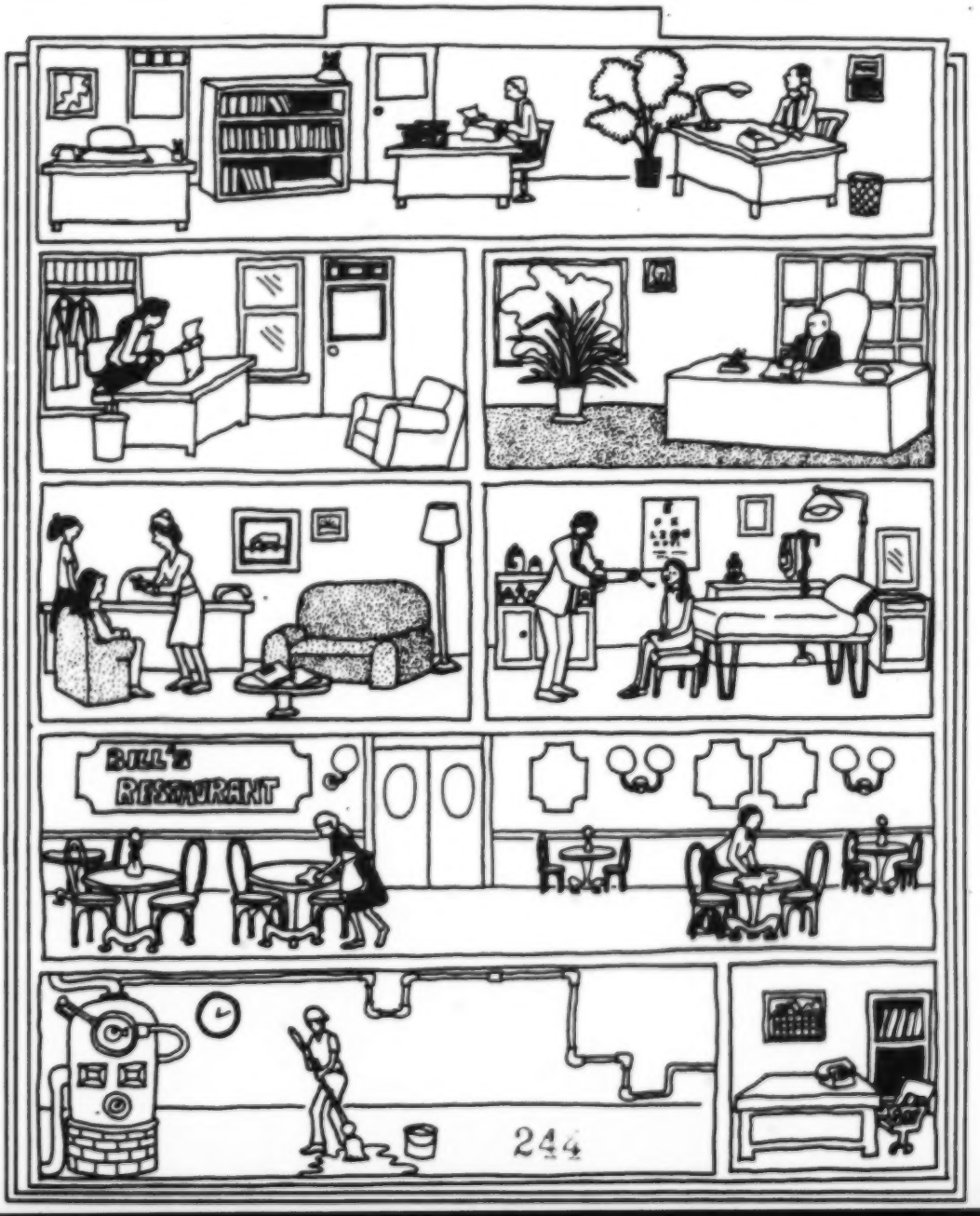
Source: Mellgren, L., & Walker, M. (1980). New horizons 1 (p. 102). Reading, MA: Addison-Wesley.

Source: Motta, J.C., & Riley, K.L. (1982). Impact! (p. 28). Reading, MA: Addison-Wesley.

"Las Oficinas"

Instructions: Look at the picture below. As you can see, the picture shows people at work in an office building. We would like you to a paragraph or so about this picture.

You can pick one or two scenes in the picture, or you can describe the entire building, if you like. On the next page is space for writing. THINK ALOUD AS YOU WORK, saying aloud what is going through your mind as you write each sentence in Spanish. Work as you would normally work, if given a writing assignment in Spanish.



Source: Mellgren, L., & Walker, M. (1980). New horizons 4 (p. 35). Reading, MA: Addison-Wesley.

"Invaders from Mars"

Instructions: Look at the pictures below. As you can see, they tell, in sequence, a story called "Invaders from Mars." We would like you to tell the story formed by the pictures.

On the next page is space for writing. THINK ALOUD AS YOU WORK, saying aloud what is going through your mind as you formulate each sentence in Spanish. Work as you would normally work, if given a writing assignment in Spanish.

"A Crowded Hotel Lobby"

Source: World English 4: The HBJ English Program (p. 94). New York: Harcourt Brace Jovanovich.